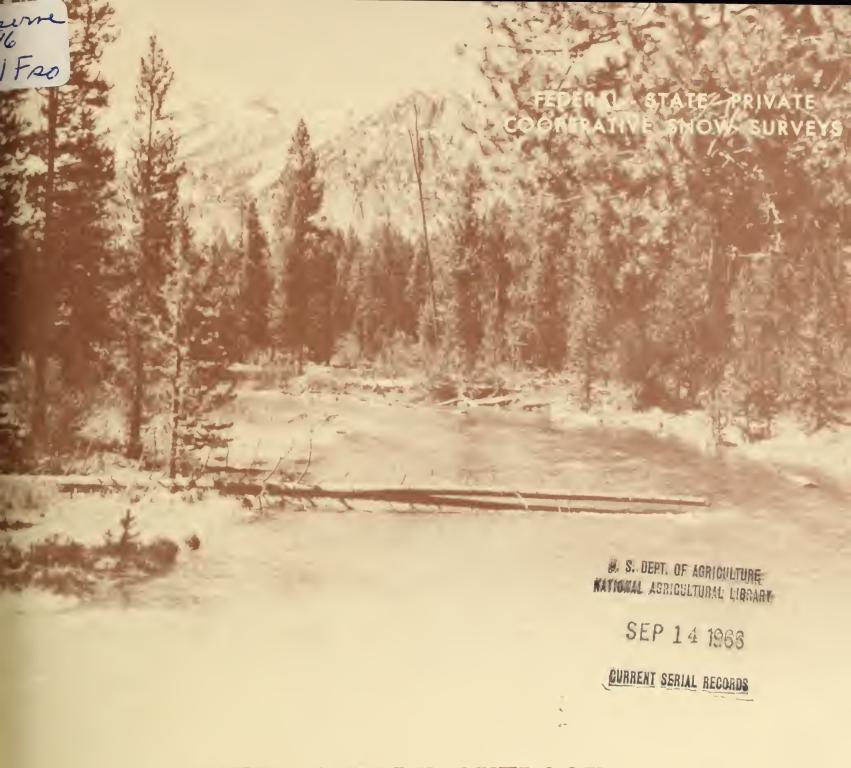
# **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.





# WATER SUPPLY OUTLOOK

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS for OREGON

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE

and

OREGON STATE UNIVERSITY

and

STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above in cooperation with other Federal, State and private organizations.

MAY 1, 1966

## UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

## PUBLISHED BY SOIL CONSERVATION SERVICE

	PUBLISHED BY SOIL	L CONSERVATION SERVICE	·E
REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS		,	
WESTERN UNITED STATES	MONTHLY (FEBMAY)	PORTLANO, OREGON	_ ALL COOPERATORS
BASIC DATA SUMMARY	OCTOBER 1	PORTLANO, OREGON	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR MAY)	PALMER, ALASKA	ALASKA S.C.D.
AR I ZON A	SEMI-MONTHLY (JAN.15 - APR.1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO ANO NEW MEXICO	MONTHLY (FEBMAY)	_ FORT COLLINS, COLORAGO	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
I 0AH0	MONTHLY (JANJUNE).	BOISE, IOAHO	IOAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JAN JUNE).	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
NEVAOA	MONTHLY (JANMAY)_	RENO, NEVAOA	NEVAGA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
ORE GON	MONTHLY (JANJUNE)-	PORTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JAN JUNE).	SALT LAKE CITY, UTAH_	UTAH STATE ENGINEER
WASHINGTON-	MONTHLY (FEB. JUNE)	_ SPOKANE, WASHINGTON	Wn. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEBJUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER
	PUBLISHED (	BY OTHER AGENCIES	
REPORTS	ISSUED		AGENCY

BRITISH COLUMBIA \_\_\_\_\_ MONTHLY (FEB. - JUNE) \_\_\_

MONTHLY (FEB.-MAY)\_\_\_\_

CALIFORNIA \_\_\_\_

WATER RESOURCES SERVICE, DEPT. OF LANOS, FOREST AND WATER RESOURCES, PARLIAMENT BLOG.,

\_\_\_ CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388,

VICTORIA, B.C., CANADA

SACRAMENTO, CALIF.

# WATER SUPPLY OUTLOOK

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

for

OREGON

ISSUED

MAY 8, 1966

Report prepared by

W. T. FROST, Snow Survey Supervisor

and

BOB L. WHALEY, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE 1218 S.W. WASHINGTON ST. PORTLAND, OREGON 97205

Issued by

A. J. WEBBER

STATE CONSERVATION IST
SOIL CONSERVATION SERVICE

G. BURTON WOOD

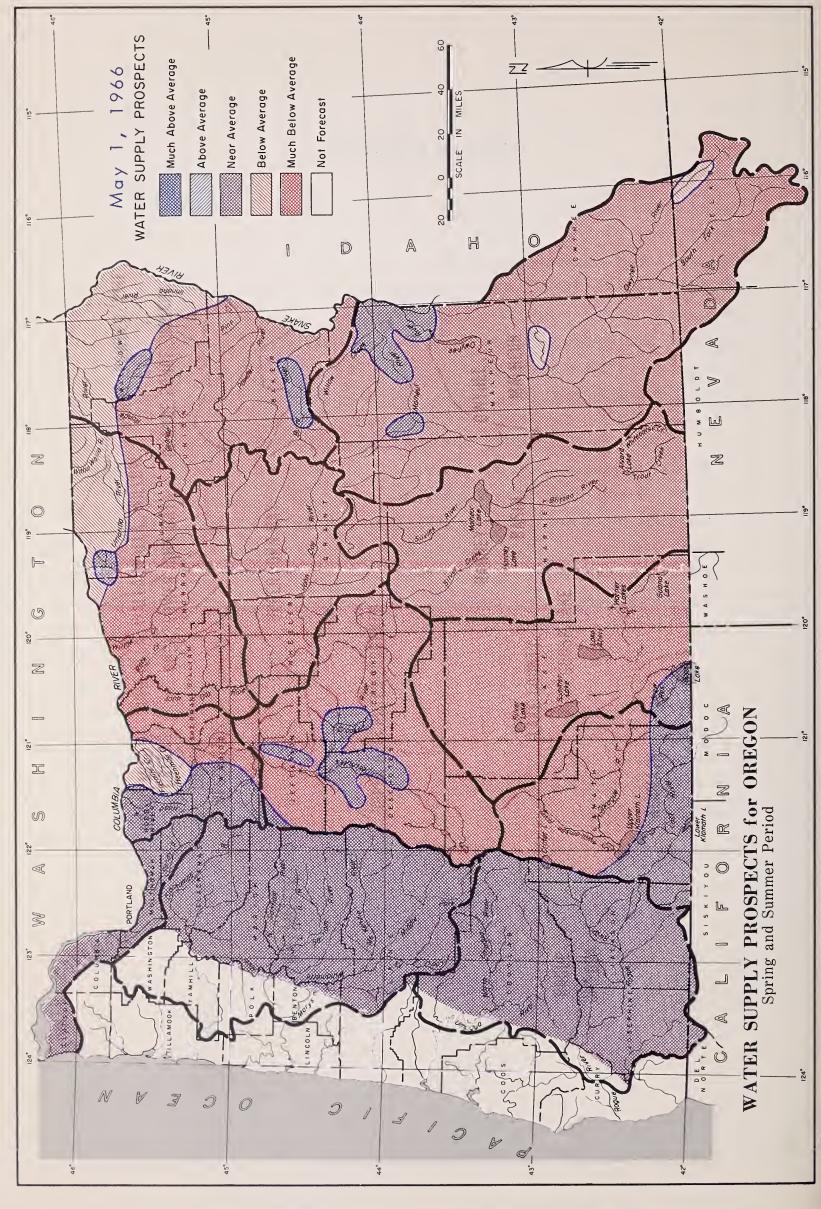
DIRECTOR
OREGON AGRICULTURAL
EXPERIMENT STATION

CHRIS L. WHEELER
STATE ENGINEER
STATE OF OREGON



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MAP AND INDEX OF OREGON SNOW COURSES(MAP)
LIST OF COOPERATORS



# WATER SUPPLY OUTLOOK for OREGON

May 1, 1966

The outlook for summer water supplies in Oregon is very poor in the eastern half of the state, except where adequate stored water is available in reservoirs or where water can be pumped. In the western half, water supplies are expected to be satisfactory.

## SNOW COVER

Mountain snowpacks have melted back at an unusually rapid rate during April due to very low precipitation amounts and abnormal temperatures and winds. Water content of the remaining snowpack varies from 92 percent average in the Willamette and Hood River watersheds and 76 to 79 percent average in the Umpqua, Rogue, Klamath and Deschutes basins down to less than half the usual amounts in the eastern half of the state.

#### SOIL MOISTURE

Watershed soils at upper elevations are near saturation from snowmelt water. At lower elevations and in valley areas, the soil is already drying out and needs good rains immediately to improve range development.

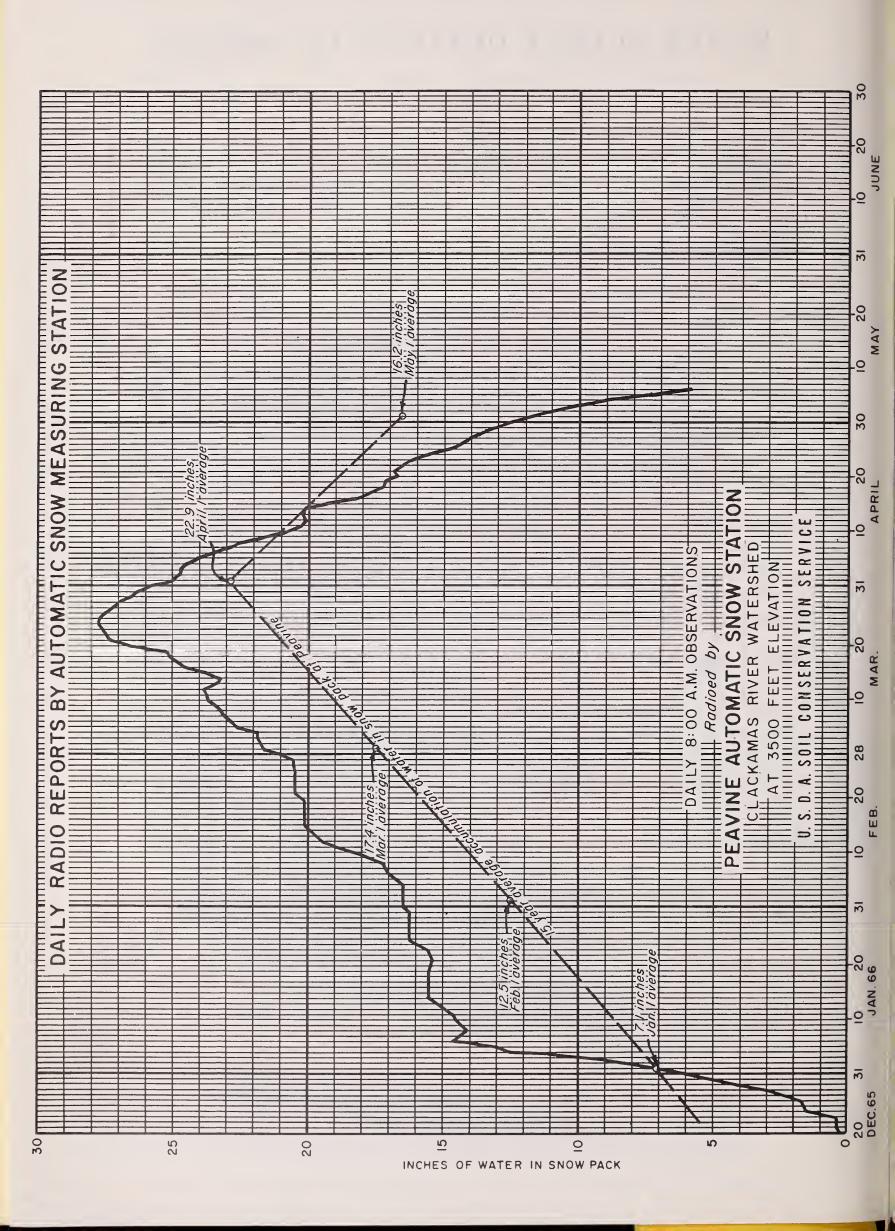
#### RESERVOIR STORAGE

Total water stored in 25 Oregon reservoirs furnishing irrigation supplies is 106 percent of the 15-year average (1948-62) and 89 percent of last year's abundant supplies. McKay Reservoir in Umatilla County contains only 66 percent of its average storage and is the only such facility that will not furnish sufficient water this year.

## STREAMFLOW

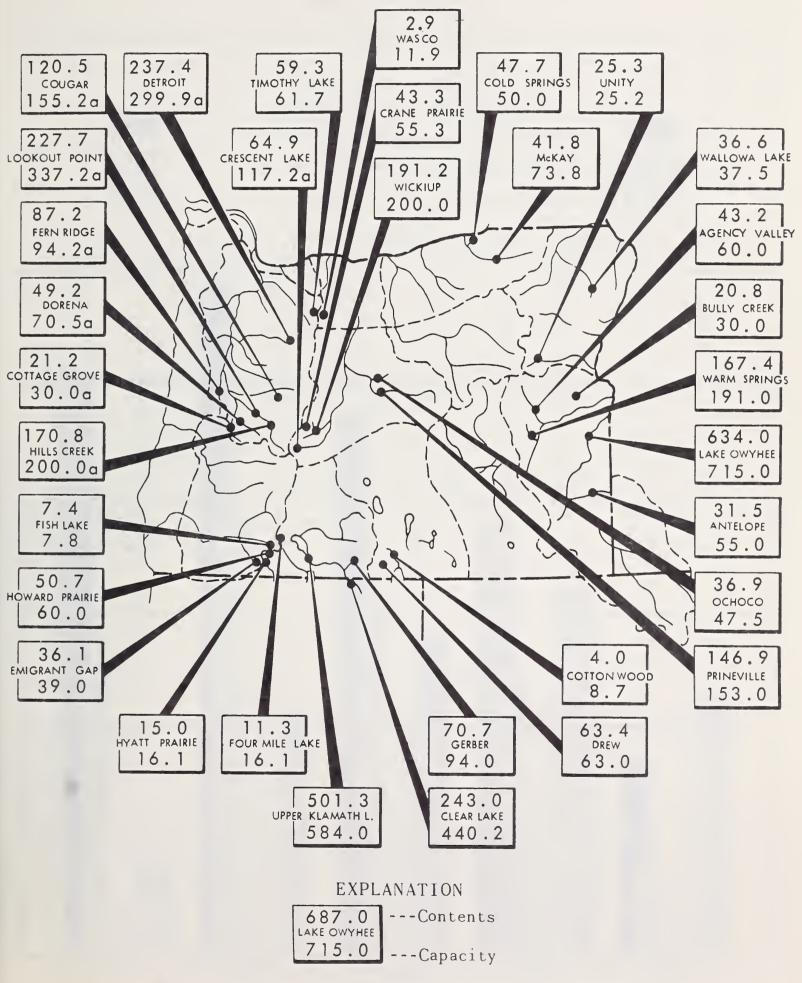
Forecasts of expected summer streamflow are near the 15-year average (1948-62) in the Willamette Valley and on Hood and White Rivers, the Deschutes, Umpqua and Rogue. Streams in Klamath Basin, western Lake County, Wallowa County and on the Walla Walla and Umatilla Rivers are forecast between 60 and 79 percent of the average. All other streams, including Crooked River, the John Day, Grande Ronde, Powder, Burnt, Malheur, Owyhee, Silvies, Blitzen and Warner Valley streams are forecast below 56 percent average with the lowest at 30 percent in the Owyhee basin.

The poor streamflow forecasted for eastern Oregon can be improved only by much above normal rainfall in each of the summer months.



# STORAGE STATUS of OREGON RESERVOIRS usable contents in thousands of acre feet

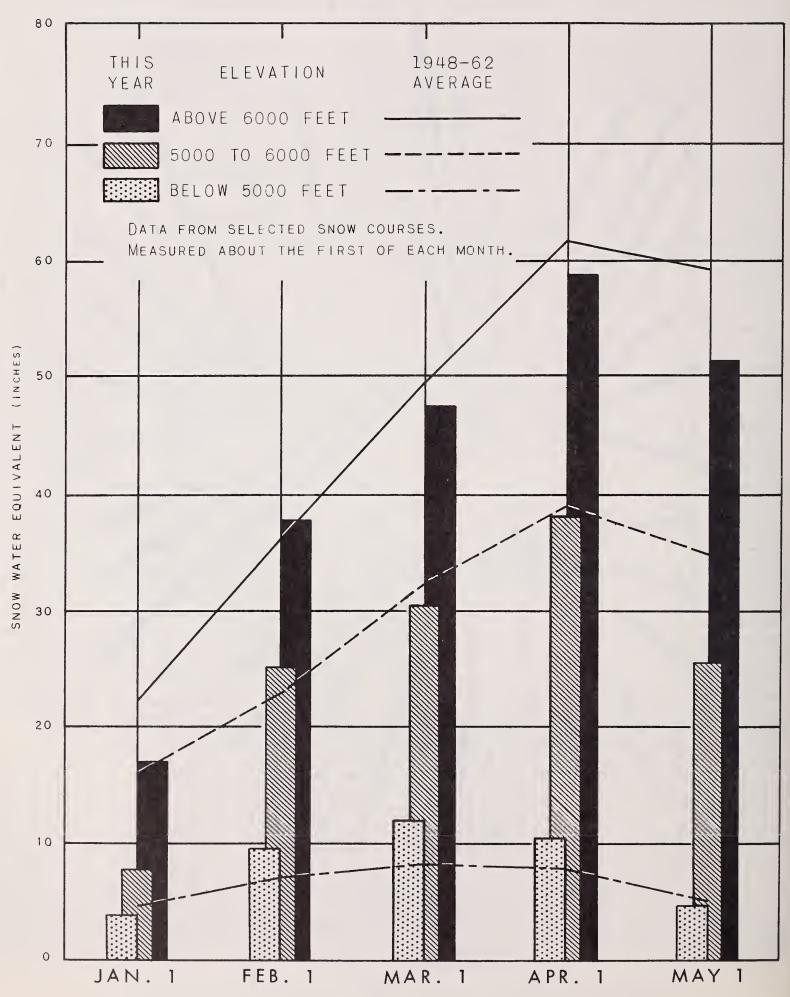
May 1, 1966



(a) Multiple purpose reservoir - space reserved for flood runoff. N. R. - No report.

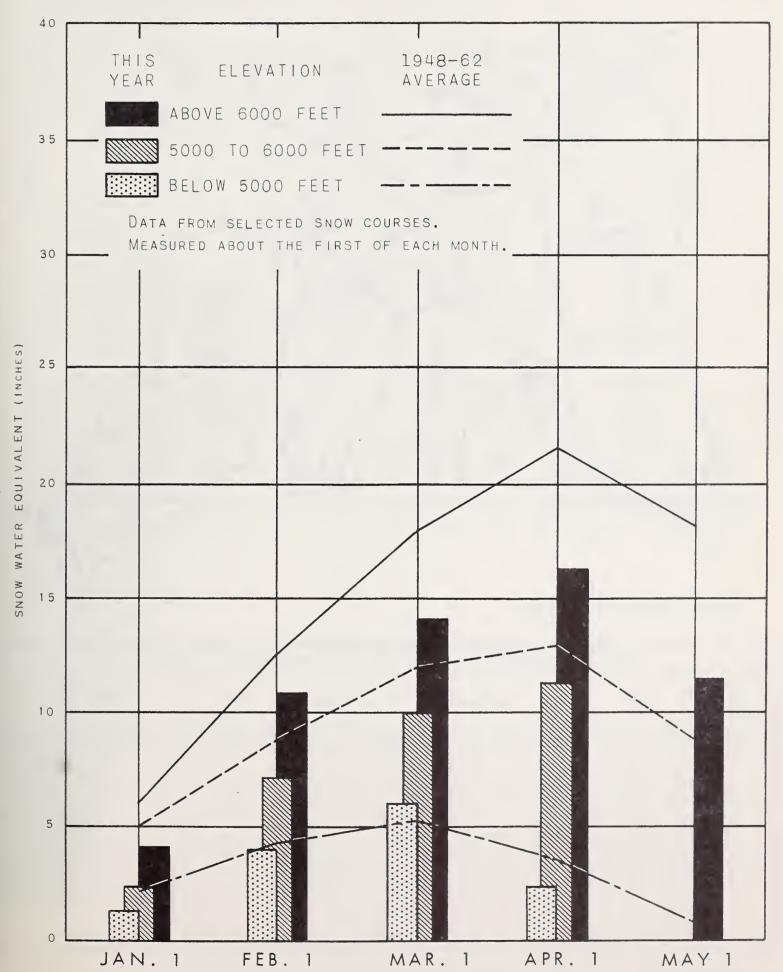
# SNOW WATER ACCUMULATION IN OREGON CASCADES

May 1, 1966

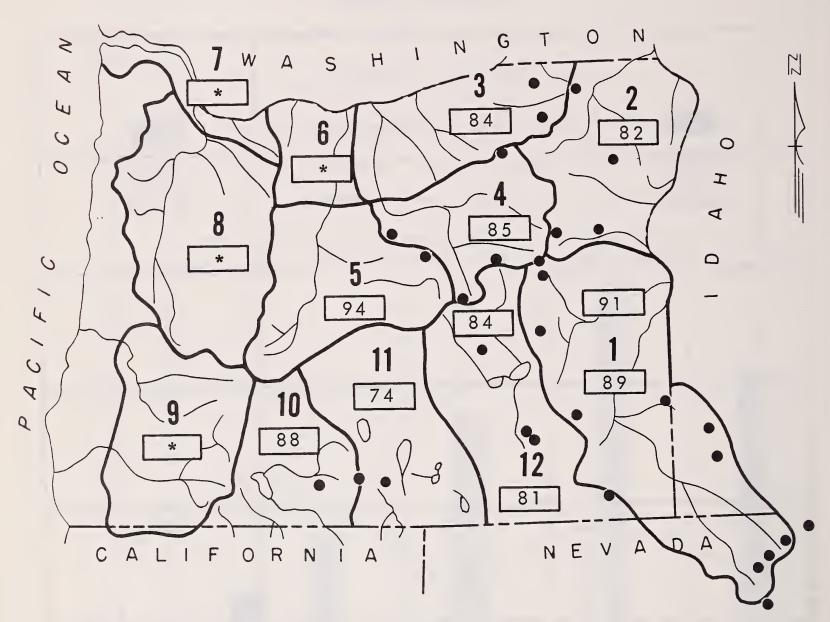


# SNOW WATER ACCUMULATION IN EASTERN OREGON

May 1, 1966



# MOUNTAIN SOIL MOISTURE in OREGON as percent of capacity May 1, 1966

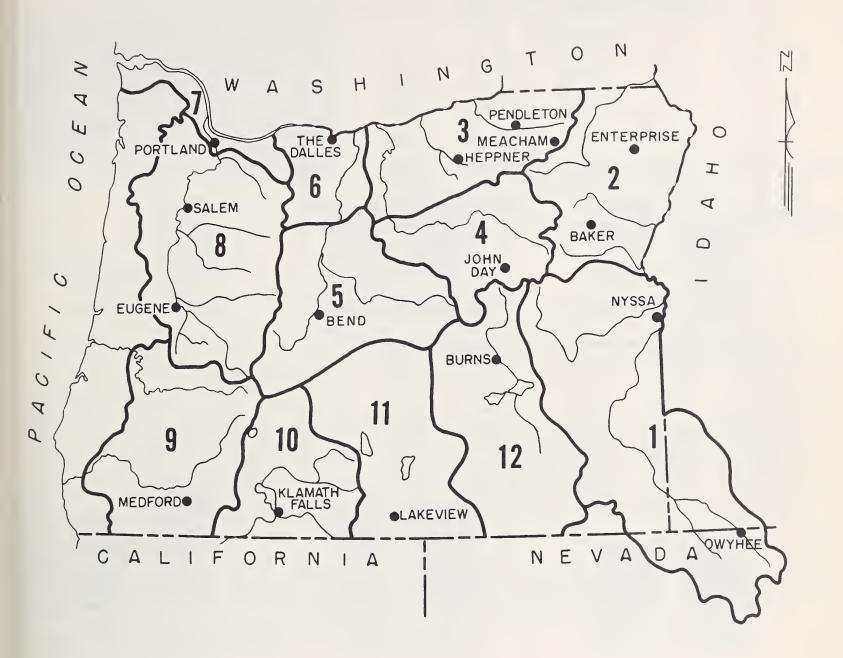


Soil Moisture Station

\*Moisture studies not yet developed in these areas.

# VALLEY PRECIPITATION in OREGON a

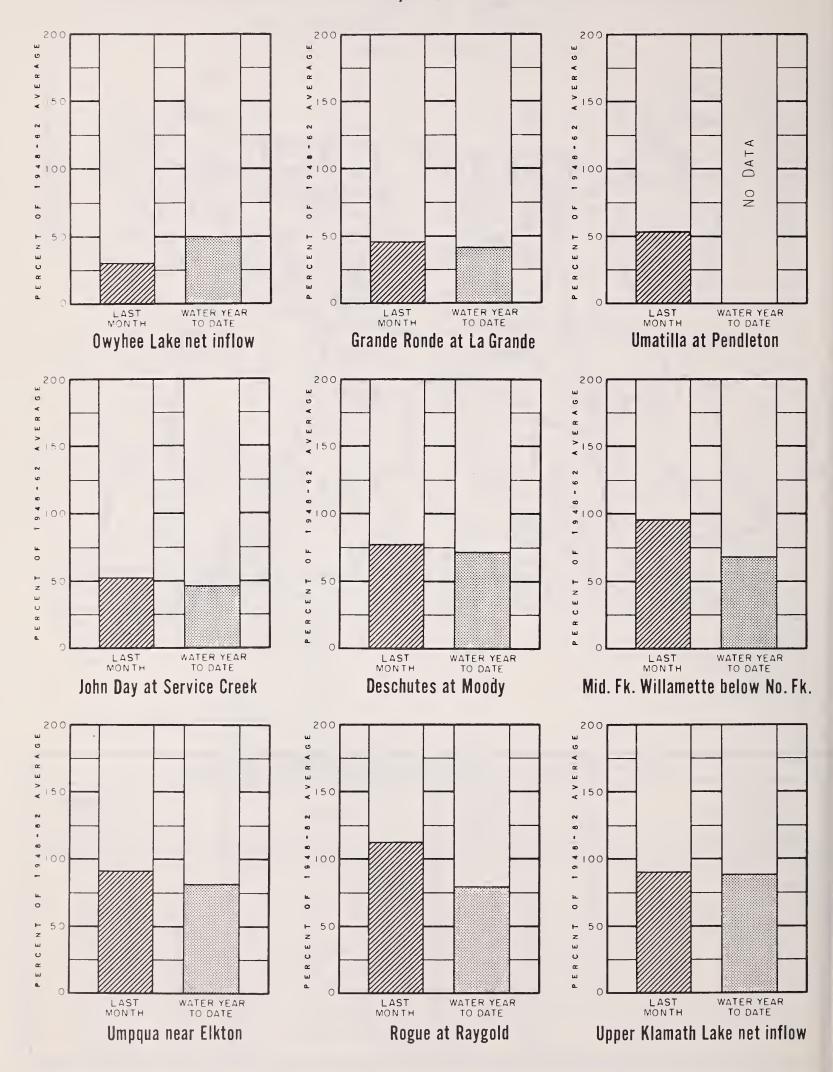
May 1, 1966



PRE	PRECIPITATION as PERCENT of the 1948-62 AVERAGE								
STATION	LAST MONTH	WATER b YEAR TO DATE	STATION	L A S T MON T H	WATER b YEAR TO DATE				
BAKER APT. BEND BURNS ENTERPRISE EUGENE APT. HEPPNER JOHN DAY KLAMATH FALLS APT.	32 24 22 15 24 7 30 79	73 87 62 58 97 58 52 55	LAKEVIEW  MEACHAM  MEDFORD APT.  NYSSA  PENDLETON APT.  PORTLAND APT.  SALEM APT.  THE DALLES  OWYHEE (NEV.)	74 33 53 34 7 36 45 0	76 61 83 65 70 92 90 47 82				

# CURRENT OREGON STREAMFLOW

May 1, 1966



Data furnished by U.S. Geological Survey; The Pacific Power and Light Co.; and North and South Boards of Control Owyhee Project.



# WATER SUPPLY OUTLOOK OWYHEE, MALHEUR WATERSHEDS OREGON

*as of*MAY 1, 1966

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

#### GENERAL OUTLOOK

Farmers and ranchers of Malheur County can expect critical water shortages this summer except where adequate supplies of stored water are available or where water can be pumped. Precipitation continues to be extremely short and periods of abnormally high temperatures have melted off most of the snowpack at an unusually fast rate. Fortunately, stored water supplies are above average in most reservoirs in the area.

#### SNOW COVER

The only remaining snow is at very high elevations and mostly in shaded locations. Snow survey reports from twelve snow courses, as of the end of April, indicated all Owyhee courses bare of snow except Bear Creek and Jacks Peak courses on the upper Owyhee at 7800 and 8420 feet elevation, respectively.

Neither of the two snow courses measured on the Malheur watersheds reported any snow. Even Blue Mountain Springs had no snow.

#### SOIL MOISTURE

Moisture in the top four feet of the soil mantle, in the upper watersheds, is now near capacity. Measurements indicate moisture is about 89 percent of capacity on the Malheur and 91 percent of capacity on the Owyhee. Strong winds, abnormal temperatures and lack of rainfall have contributed to drier than normal soils in the lower elevations.

#### RESERVOIR STORAGE

The only bright spot in the water picture this year is the water held in reservoirs. Much of this was a carryover from last season's excellent supplies.

Jordan Valley Irrigation District is fortunate to have about 31,500 acre feet of water in Antelope Reservoir. This will provide slightly less than an average water supply for this area.

The Owyhee Reservoir now holds 634,000 acre feet, which is about 80,000 acre feet more than is usually on hand at this date. This is an adequate supply.

On the Malheur watersheds, Warmsprings Reservoir holds 167,400 acre feet now, which is about 39,000 acre feet more than the average. Coupled with remaining streamflow, this storage should provide about 3 feet of water for Warmsprings District lands.

Vale-Oregon District lands can bank on 43,200 acre feet held in Agency Valley Reservoir and an additional 20,800 acre feet in Bully Creek as of May first. This should provide a near average water supply.

continued on next page

#### STREAMFLOW

Forecasts of streamflow in Malheur County have dropped from about 6 to 10 percent of the last month forecast. The Malheur near Drewsey is forecast at 12,000 acre feet, May through July, or 35 percent of average (1948-62) while the North Fork is forecast at 13,000 acre feet or 39 percent for the same three months.

Net inflow to Lake Owyhee is forecast at 48,000 acre feet, May through July, or 29 percent of the average. Jordan Creek is forecast to flow 29,000 acre feet or 30 percent average, April through July.

# WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

# RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1966

STREAM or AREA	FLOW PERIOD		IOD RESERVOIR		USABLE	MEASUR	ED (First o	f Month)
0.1124	SPRING SEASON	LATE SEASON		RESERVOIN	CAPACITY	THIS YEAR	LAST YEAR	1948-62 AVERAGE
Boulder Creek Bully Creek Cow Creek Jordan Creek Jordan Valley Irrig. Dist. McDermitt Creek Oregon Canyon Creek Owyhee Project Succor Creek Tenmile Creek Vale-Oregon Irrig. Dist. Warmsprings Irrig. Dist. Willow Creek (Reservoired)	Spring peak flows are past.	Poor Poor Poor Poor Fair Poor Poor Average Poor Average Average Fair		Agency Valley Antelope Bully Creek Owyhee Warmsprings	60.0 55.0 30.0 715.0 191.0	43.2 31.5 20.8 634.0 167.4	60.0 55.0 28.9 714.2 190.4	51.2 28.5  553.6 128.6

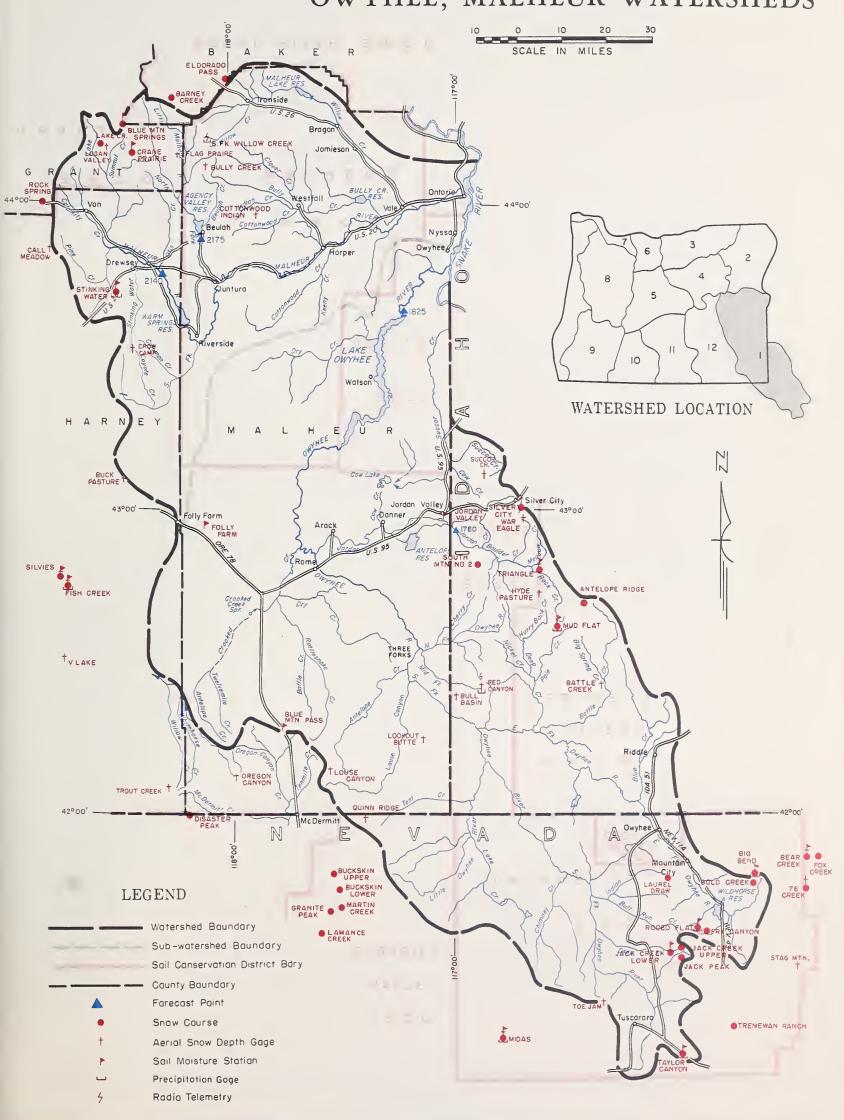
## STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of May 1, 1966

NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT. OF AVERAGE 1
1780	Jordan Creek above Lone Tree Creek	29	April-July	98	30
2140	Malheur near Drewsey	12	May-July	34	35
		13	May-Sept.	35	37
2175	Malheur, North Fork at Beulah <sup>d</sup>	13	May-July	33	39
		15	May-Sept.	38	39
1825	Owyhee Reservoir net Inflow <sup>k</sup>	48	May-July	168	29
		55	May-Sept.	184	30
1					

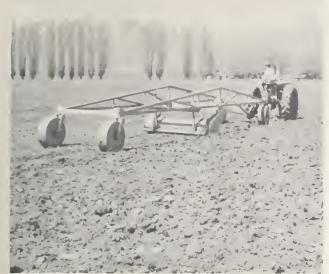
SOIL MOISTURE		PROFILE	(Inches)		SOIL MOISTU	RE (Inches)	
STATION		DEPTH	CAPACITY	DATE	THIS	LAST	2 YEARS
NAME	ELEVATION		CAI AGITT		YEAR	YEAR	AGO
Bear Creek (Nev.) Big Bend (Nev.) Blue Mountain Springs Crane Prairie Folly Farm Jack Creek, Lower (Nev.) Jordan Valley Mud Flat (Ida.) Rodeo Flat (Nev.) Stinking Water Summit	7800 6700 5900 5375 4450 6800 4390 5500 6800 4800	72 48 42 48 30 48 48 48 48	16.8 16.7 16.9 18.2 12.5 8.6 19.3 12.8 11.0 21.9	3-28-66 4-28-66 4-27-66 4-27-66 3-8-66 5-3-66 3-8-66 4-29-66 5-3-66 4-6-66	12.1 <sup>f</sup> 16.5 12.8 17.9 8.5 <sup>f</sup> 8.1 14.6 <sup>f</sup> 14.4 11.0 21.4 <sup>f</sup>	14.4 <sup>f</sup> 16.7 13.5 18.0 12.1 <sup>f</sup> 8.4 17.1 <sup>f</sup> 12.1 11.0 21.9 <sup>f</sup>	10.2 <sup>f</sup> 16.5 12.5 17.4 8.3 <sup>f</sup> 8.4 14.5 <sup>f</sup> 9.5 <sup>f</sup> 10.8 21.1 <sup>f</sup>
Taylor Canyon Triangle (Ida.)	6200 5150	48 48	15.1 16.6	5-2-66 c	14.9	15.0	14.9

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (l) Ground measurement. (m) Average for 5 or more years in base period.

# OWYHEE, MALHEUR WATERSHEDS



SNOW		CURRENT INFORMATION			PAST RECORD	
SNOW COURSE	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONT	ENT (Inches) 1948-62 AVERAGE
Antelope Ridge (Ida.) Bear Creeke (Nev.) Big Bend (Nev.) Blue Mountain Springs Eldorado Pass Fry Canyon (Nev.) Gold Creek (Nev.) Jack Creek, Lower (Nev.) Jack Creek, Upper (Nev.) Jack Peak (Nev.) Mud Flat (Ida.) Rock Spring Rodeo Flat (Nev.) Silver City (Ida.) South Mountain #2 (Ida.) Stinking Water Taylor Canyon (Nev.) Tremewan Ranch (Nev.) Snow courses not shown were not scheduled for measurement this month.	5900 7800 6700 5900 4600 6600 6800 7250 8420 5500 5100 6800 6400 6340 4800 6200 5700	b 4/28 4/28 4/27 4/22 5/3 4/28 5/3 5/3 4/29 4/28 5/3 4/29 Report 5/1 5/3 5/3	26 0 0 0 0 45 0 0 0 delayed 0	8.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 24.1 T 14.1  0.0 0.0 0.0 0.0 0.0 3.5  0.0 0.0	21.0h 1.3h 7.8 <sup>m</sup> 



# WATER SUPPLY OUTLOOK BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS OREGON

as of

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

## GENERAL OUTLOOK

Most farmers and ranchers of Baker, Union and Wallowa Counties can expect critical water shortages this summer, except where adequate supplies of stored water are available or where water can be pumped. Precipitation continues to be extremely short and periods of abnormally high temperatures have melted off most of the snowpack. Fortunately, stored water supplies are above average.

#### SNOW COVER

All snow is gone from most areas below 5000 feet in elevation. Water content of the mountain snowpack is about 78 percent of the May first average on the Wallowa watersheds and 49 percent on the main Grande Ronde. The Powder and Burnt watersheds have only about 40 to 47 percent of the usual snow cover.

#### SOIL MOISTURE

Moisture in the top four feet of the soil mantle in upper watersheds has increased by absorption of snowmelt water to about 82 percent of capacity compared with 90 percent one year ago. Lack of precipitation, coupled with cool winds, has held back range development and has dried out the top 6 inches of lower elevation soils.

#### RESERVOIR STORAGE

Stored water supplies are the only bright point in the water supply picture this year. Wallowa Lake holds 36,600 acre feet compared with 31,900 acre feet last year and benefits now from a huge carryover from last season's supply.

Unity Reservoir is full with 25,300 acre feet on hand and, like Wallowa Lake, will provide adequately for this season's irrigation.

#### STREAMFLOW

Forecasts of streamflow in this northeastern Oregon region have dropped from 2 to 17 percent below last month's estimates and put all irrigated areas into the poor water supply category, except users of Unity and Wallowa Lake water, which will be average, and the Lostine-Wallowa, Alder Slope and Imnaha areas, where water supplies will be fair this summer.

Flow of Burnt River is forecast at 39 percent average for the May through September period. For the same period, the Powder is forecast at 56 percent average and the Grande Ronde at La Grande at 50 percent average. Catherine Creek is forecast at 60 percent.

Wallowa River tributaries are forecast at 66 percent for Bear Creek, 62 percent for Hurricane, 70 percent for Lostine and 75 percent for the East Fork of the Wallowa for May through September.

# WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

# RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1966

STREAM or AREA
STITEAM OF AREA
der Slope ker Valley g Creek over Cr. (nr. N. Powder) we rkee gle Valley gin terprise-Joseph reford-Bridgeport naha River Grande-Island City stine-Wallowa . Powder River-Wolf Cr. ne Valley wder River-Elk Creek nmerville mpter Valley ion-Hot Lake ity

# STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of May 1, 1966

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT. OF AVERAGE 1
3305 2730 3200 3190 3295 2920 3300 2755 3250	Bear near Wallowa Burnt near Hereford <sup>d</sup> Catherine near Union Grande Ronde at La Grande  Hurricane Creek near Joseph Imnaha at Imnaha Lostine near Lostine Powder River near Baker  Wallowa, East Fork near Joseph <sup>d</sup>	40 6.2 7.0 35 59 65 30 213 92 24 25 6.6 8.3	May-Sept. May-June May-Sept. May-Sept. May-July May-Sept. April-Sept. April-Sept. April-Sept. May-July May-Sept. May-July May-Sept. May-July May-Sept.	61 16.0 17.8 58 118 121 48 318 131 44 45 8.8 11.2	66 39 39 60 50 50 62 67 70 55 56 75 74

OIL MOISTURE		PROFILE	(Inches)		SOIL MOISTU	ite (menes)	
STATION		DEPTH	CAPACITY	DATE	THIS	LAST	2 YEARS
NAME	ELEVATION				YEAR	YEAR	AGO
Blue Mountain Summit Emigrant Springs Tollgate	5100 3925 5070	36 48 48	16.8 22.3 23.6	4-29-66 4-28-66 4-29-66	12.6 19.5 19.2	16.0 21.0 19.7	14.2 22.0 19.6

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



# Burnt, Powder, Pine, Grande Ronde, Imnaha Watersheds

SNOW		CURRENT INFORMATION			PAST RECORD		
SNOW COURSE		DATE OF	SNOW DEPTH	WATER CONTENT	WATER CONT	ENT (Inches)	
NAME	ELEVATION	SURVEY	(Inches)	(Inches)	LAST YEAR	1948-62 AVERAGE	
Aneroid Lake #1	7480	5/2	63	30.8	53.6	39.7 <sup>m</sup>	
Aneroid Lake #2	7300	5/2	54	27.0	43.8	34.2 <sup>m</sup>	
Anthony Lake	7125	4/28	41	19.6	42.2	29.2 <sup>m</sup>	
Anthony Ski Hill			surveyed				
Bald Mountain <sup>e</sup> (Ore.)	6700	5/2	0	0.0	22.5		
Barney Creek	5950	С					
Beaver Reservoir	5340	4/27	6	2.2	8.7	6.2 <sup>m</sup>	
Big Sheep <sup>e</sup>	6200	5/2	21	10.5	22.5		
Blue Mountain Summit	5098	4/29	0	0.0	0.6	1.6 <sup>m</sup>	
Bourne	5800	4/27	3	1.4	11.1	5.6 <sup>m</sup>	
County Line	4800	4/29	0	0.0	0.0		
Dooley Mountain	5430	4/27	0	0.0	0.0	1.7 m	
Eilertson Meadows	5400	4/25	0	0.0	4.0	3.9	
Eldorado Pass	4600	4/22	0	0.0	~ -'		
Gold Center	5340	4/27	0	0.0	1.5	2.5 <sup>m</sup>	
Goodrich Lake	6775		surveyed				
Intake House	4930	4/25	3	1.0	4.1		
Little Alps	6200	4/28	21	8.6	17.1	~ ~	
Little Antone	5000	4/28	0	0.0	0.0		
Lucky Strike	5050	4/29	8	3.1	8.1	<del>-</del> -	
Meacham	4300	4/28	0	0.0	T	1.9 m	
Mirror Lake	8200	5/2	93	52.0	106.5	<b>–</b> –	
Moss Spring	5850	5/2	17	7.6	25.0	21.7 <sup>m</sup>	
Power Plant	3990	4/25	0	0.0	0.0	~ ~	
Schneider Meadows	5400	4/28	22	9.9	26.2		
Schoolmarm	4775	4/29	0	0.0	0.0		
Standley	7400	5/2	35	17.5	33.5		
Taylor Green	5740	5/2	3	1.6	13.0	m	
Tipton	5100	4/29	0	0.0	0.0	1.7 <sup>m</sup>	
Tollgate	5070	4/29	20	9.9	12.3	20.6 <sup>h</sup>	
TV Ridge	7000	5/2	21	10.5	22.5		



# WATER SUPPLY OUTLOOK UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS OREGON

*as of*MAY 1, 1966

# U. S. D. A. SOIL CONSERVATION SERVICE OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

#### GENERAL OUTLOOK

Most farmers and ranchers of Umatilla, Morrow, Gilliam and Sherman Counties can expect critical water shortages this summer, except where adequate supplies of stored water are available or where water can be pumped. Precipitation continues to be extremely short and abnormal temperature and wind conditions have melted off most of the snowpack.

#### SNOW COVER

On May first, snow was present at only two out of the nine snow courses measured. Tollgate snow course, at the head of the Walla Walla and the North Fork Umatilla, had 20 inches of snow containing 9.9 inches of water. Last year, this course had 12.3 inches of water on this date. Lucky Strike snow course, on the head of Birch Creek, had 8 inches of snow containing 3.1 inches of water compared with 8.1 inches of water last year.

#### SOIL MOISTURE

Moisture in the top four feet of the soil mantle in upper watershed areas increased by absorption of snowmelt water and is now 84 percent of capacity, compared with 88 percent the previous year.

#### RESERVOIR STORAGE

Stored water in Cold Springs Reservoir was 47,700 acre feet on May first compared with 50,000 acre feet a year ago. This is the usual water available for the Hermiston Irrigation District.

McKay Reservoir now holds only 41,800 acre feet compared with 70,700 acre feet last year and the average amount of 62,900 acre feet. Users of McKay water will have less than average water supplies this season.

#### STREAMFLOW

Streamflow forecasts in the mid-Columbian area have dropped from 8 to 30 percent since last month's estimates were made. The Walla Walla South Fork is forecast at 78 percent average (1948-62) for the May through September period. There will be some late-season water shortages in the Milton-Freewater vicinity.

The Umatilla River at Pendleton is forecast to flow 62 percent average, May through September, and there will be critical shortages this year. Inflow to McKay Reservoir is forecast at only 6,500 acre feet or 46 percent average, May through September. This is a very poor flow and will not give much relief to McKay water users.

Butter Creek is forecast to flow only 2,500 acre feet or 53 percent average. This is a critical water supply. Flows of Birch Creek, Willow, Rhea, and Rock Creek will be critically short this season.

Report prepared by w.T. FROST AND BOB L. AHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST. PORTLAND, OREGON 97205

# WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

# RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1966

STREAM or AREA	FLOW I	PERIOD
STREAM OF AREA	SPRING SEASON	LATE SEASON
Birch Creek Butter Creek Couse Creek Dry Creek Dugger Creek Johnson Creek McKay Creek Mill Creek Mud Creek Pine Creek Rhea Creek Rock Creek Umatilla R. (Cold Springs Reservoir) Umatilla River, Main Umatilla River, Little Walla Walla River, Main Walla Walla River, No. Fk. Walla Walla River, So. Fk. Willow Creek	Spring peak flows are past.	Poor Poor Fair Fair Fair Fair Fair Fair Fair Poor Poor  Average Poor Fair Fair Fair Fair Fair Fair Fair Fai

	(1,000		riay 1	, 1966
RESERVOIR	USABLE	MEASUR	ED (First o	f Month)
WEGEK TOWN	CAPACITY	THIS YEAR	LAST YEAR	1948-62 AVERAGE
Cold Springs Camp McKay	50.0 73.8	47.7 41.8	50.0 70.7	49.2 62.9
		·		

# STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of May 1, 1966

NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE I
0320 0225 0200 0210 0100	Butter Creek near Pine City McKay near Pilot Rock Umatilla River near Gibbon Umatilla River at Pendleton Walla Walla, So. Fork near Milton	2.5 6.5 37 40 57 60 35 45	May-July May-Sept. May-July May-Sept. May-July May-Sept. May-July May-July	4.7 14.1 52 57 92 97 44 58	53 46 71 70 62 62 79 78

SOIL MOISTURE		PROFILE	(Inches)	SOIL MOISTURE (Inches)			
STATION  NAME ELEVATION		DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Athena-Weston Battle Mountain Summit Emigrant Springs Tollgate	1700 4340 3925 5070	48 48 48 48	18.7 13.8 22.3 23.6	4-29-66 4-28-66 4-28-66 4-29-66	14.3 12.5 19.5 19.2	14.2 13.8 21.0 19.7	14.4 13.7 22.0 19.6

SNOW		CUR	RENT INFORMA	PAST RECORD		
SNOW COURSE		DATE OF	SNOW DEPTH (Inches)	WATER	WATER CONTENT (Inches	
NAME	ELEVATION	SURVEY		(Inches)	LAST YEAR	1948-62 AVERAGE
Arbuckle Mountain	5400	4/29	0	0.0	0.0	2.7h
Battle Mountain Summit	4340	4/28	0	0.0	0.0	
Blue Mountain Camp	4300	4/29	0	0.0	0.0	
Emigrant Springs	3925	4/28	0	0.0	0.0	1.2 <sup>m</sup>
Lucky Strike	5050	4/29	8	3.1	8.1	
Meacham	4300	4/28	0	0.0	T	1.9,
Tollgate	5070	4/29	20	9.9	12.3	20.6 <sup>h</sup>
Walla Walla Diversion	2400	4/29	0	0.0		
Weston Mountain	2700	4/29	0	0.0	0.0	

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

# UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS



Umatilla, Walla Walla, Willow, Rock, Lower John Day Watersheds



# WATER SUPPLY OUTLOOK UPPER JOHN DAY WATERSHEDS OREGON

as of
MAY 1, 1966

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

#### GENERAL OUTLOOK

Most farmers and ranchers of Grant and Wheeler Counties can expect critical water shortages this summer. Precipitation continues to be extremely short, and abnormal temperature and wind conditions have melted off the snow at unusually rapid rates with much of the water entering the soils.

#### SNOW COVER

On May first, snow was present at only three out of the fourteen snow courses measured. Snow at Olive Lake snow course at 6000 feet elevation has a water content of 11.8 inches, compared with 23.6 inches last year. The over-all snow cover is about 48 percent of the 15-year average (1948-62) and 38 percent of last year. There is very little snow left below 5500 feet elevation.

#### SOIL MOISTURE

Moisture in the top four feet of the soil mantle in the upper watersheds has increased in one month from 77 percent of capacity to 85 percent. This moisture came from snowmelt water. Valley soils and soils on exposed ridges have dried rapidly in the past month with drying winds and lack of precipitation chiefly responsible.

#### STREAMFLOW

Forecasts of streamflow for the April through September period have been reduced about 11 to 12 percent from last month's estimates due to rapid snowmelt and drying conditions.

Flow of the John Day River at Prairie City is forecast at 49 percent average for the April through September period. Flow of the Middle Fork is also estimated at 49 percent.

The forecast for Strawberry Creek is estimated at 68 percent which is higher than the others, possibly, due to the orientation of the watershed to the north.

Most smaller streams and tributaries will have much below average flows this season and will provide critically short water supplies.

# WATER SUPPLY OUTLOOK "Average" or "Excellent"

# RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1966

STREAM or AREA	FLOW PERIOD				
OTHERW OF AREA	SPRING SEASON	LATE SEASON			
Beech Creek Beech Creek-Fox-Long Cr. Bridge-Mountain Creeks Camas Creek Indian-Pine Creeks John Day River, Main Fork John Day River, Mid. Fork John Day River, N. Fork John Day River, S. Fork Monument-Kimberly Strawberry Creek	Spring peak flows are past.	Poor Poor Poor Fair Poor Poor Poor Poor Poor Poor Fair			

RESERVOIR STORAGE	(1,000	MU. 11.	May 1,	1966
RESERVOIR	USABLE	MEASUR	ED (First o	f Month)
RESERVOIR	CAPACITY	THIS YEAR	LAST YEAR	1948-62 AVERAGE

# STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of May 1, 1966

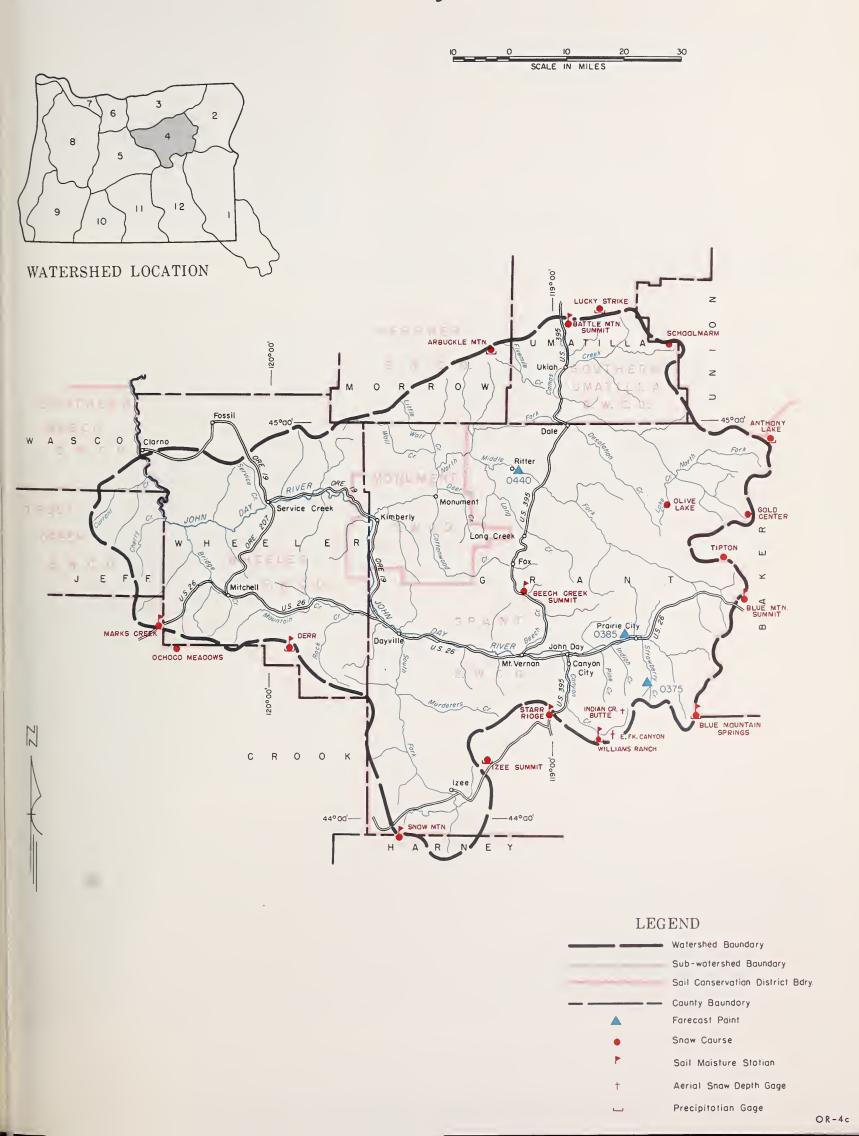
NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT. OF AVERAGE <sup>1</sup>
0385	John Day at Prairie City	23 25	April-July April-Sept.	46 51	50 49
0440	John Day, Middle Fork at Ritter	62 64	April-July April-Sept.	127 131	49 49
0375	Strawberry near Prairie City	5.6 6.0	April-July April-Sept.	8.1 8.8	69 68

SOIL MOISTURE	PROFILE (Inches) SOIL MOISTURE (Inches)		PROFILE (Inches) SOIL MOISTURE (				
STATION		DEPTH	DEPTH CAPACITY	A DACITY DATE	DATE THIS LAST		2 YEARS
NAME	ELEVATION	DEFTII	CATACITI	DATE	YEAR	YEAR	AGO
Battle Mountain Summit	4340	48	13.8	4-28-66	12.5	13.8	13.7
Blue Mountain Springs	5900	42	16.9	4-27-66	12.8	13.5	12.5
Blue Mountain Summit	5100	36	16.8	4-29-66	12.6	16.0	14.2
Derr	5670	24	9.0	3-28-66	8.5 <sup>f</sup>		
Marks Creek	4540	36	14.1	4-29-66	13.2	13.6	13.4
Snow Mountain	6300	48	16.7	3-29-66	12.3 <sup>f</sup>	15.9 <sup>f</sup>	12.4
Starr Ridge	5150	36	10.6	4-27-66	10.4	10.3	10.6

SNOW		CUR	RENT INFORMA	PAST RECORD		
SNOW COURSE		DATE OF	SNOW DEPTH	WATER	WATER CONTENT (Inches)	
NAME	ELEVATION	SURVEY	(Inches)	CONTENT (Inches)	LAST YEAR	1948-62 AVERAGE
Anthony Lake	7125	4/28	41	19.6	42.2	·29.2 <sup>m</sup>
Arbuckle Mountain	5400	4/29	0	0.0	0.0	2.7h
Battle Mountain Summit	4340	4/28	0	0.0	0.0	
Beech Creek Summit	4800	4/27	0	0.0	0.0	0.6
Blue Mountain Springs	5900	4/27	0	0.0	14.1	7.8
Blue Mountain Summit	5098	4/29	0	0.0	0.6	1.6
Derr	5670	С				:
East Fork Canyon <sup>e</sup>	5700	С				
Gold Center	5340	4/27	0	0.0	1.5	2.5 <sup>m</sup>
Indian Creek Butte <sup>e</sup>	6550	С				
Izee Summit	5293	4/27	0	0.0	0.0	1.6 <sup>m</sup>
Lucky Strike	5050	4/29	8	3.1	8.1	
Marks Creek	4540	4/29	0	0.0	0.0	$T^m$
Ochoco Meadows	5200	С		•		h
Olive Lake	6000	4/28	28	11.8	23.6	16.9 <sup>h</sup>
Schoolmarm	4775	4/29	0	0.0	0.0	
Snow Mountain	6300	С				,
Starr Ridge	5150	4/27	0	0.0	0.0	0.4 <sup>h</sup>
Tipton	5100	4/29	0	0.0	0.0	1.7
Williams Ranch	4500	с				

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# UPPER JOHN DAY WATERSHEDS



Upper John Day Watersheds



# WATER SUPPLY OUTLOOK UPPER DESCHUTES, CROOKED WATERSHEDS OREGON

as of

MAY 1, 1966

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

#### GENERAL OUTLOOK

Many farmers and ranchers of Crook and Jefferson Counties can expect critical water shortages this summer, except where adequate supplies of stored water are available and where water can be pumped. Precipitation continues to be very short and abnormal temperature and wind conditions have melted off the snow at unusually rapid rates. Deschutes County farmers will fare much better with mostly adequate water supplies.

#### SNOW COVER

Water content of the remaining mountain snowpack is about 78 percent of the 15-year average (1948-62) on the Deschutes watershed and approximately half the usual amount on the Crooked River watersheds.

#### SOIL MOISTURE

Moisture, in the top four feet of the soil mantle in the upper watersheds, has increased from 86 percent capacity to a point nearer the excellent 97 percent of last season. Valley soils and range lands are below average in moisture content.

## RESERVOIR STORAGE

Stored water supplies are excellent. This situation has been greatly boosted by the large carryover of water from last season's excellent supply.

On the Crooked River, Ochoco and Prineville Reservoirs now contain a total of 183,800 acre feet of water, compared with 206,000 acre feet last year and an average amount of 174,000 acre feet.

On the Deschutes watershed, Crane Prairie and Wickiup Reservoirs now hold 43,300 acre feet and 191,200 acre feet, respectively, while Crescent Lake contains 64,900 acre feet - all above average amounts.

## STREAMFLOW

Forecasts of streamflow for the remaining months of the irrigation season have been reduced from 7 to 19 percent below last month's figures.

Flow of Crooked River and Ochoco Creek are forecast at 52 and 47 percent, respectively. Together with stored water this will be an adequate supply. However, lands served without benefit of stored water will have critically short water supplies.

Tumalo and Squaw Creeks are forecast at 83 percent average, which will be equal to about the usual irrigation needs.

Flow of the Little Deschutes at Lapine and inflow to Crane Prairie Reservoir are forecast at 47 and 80 percent, respectively. The Deschutes at Benham Falls is forecast at 79 percent average and, coupled with stored water, should furnish near average amounts of irrigation water for this season.

# WATER SUPPLY OUTLOOK "Average" or "Excellent"

STREAM or AREA	FLOW	PERIOD
STREAM OF AREA	SPRING SEASON	LATE SEASON
Arnold Irrigation District Bear Creek Beaver Creek Camp Creek Central Ore. Irrig. Dist. Crooked River Deschutes River Hay-Trout Creeks Lone Pine Irrig. Dist. Mill Creek North Unit Irrig. Dist. Ochoco Creek Sisters Irrigation Dist. Snow Creek Irrig. Dist. Squaw Creek Irrig. Dist. Swalley Ditch Tumalo Project Walker Basin Irrig. Dist.	Spring peak flows are past.	Average Poor Poor Poor Average Poor Average Poor Average Poor Average Poor Average Average Average Excellent Average Fair

# RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1966

ILSERVUIR STURAUE	(1,000	AU. II.	May I	, 1966
RESERVOIR	USABLE	MEASUR	ED (First o	f Month)
RESERVOIN	CAPACITY	THIS YEAR	LAST YEAR	1948-62 AVERAGE
Crane Prairie Crescent Lake Ochoco Prineville Wickiup	55.3 117.2* 47.5 153.0 200.0	43.3 64.9 36.9 146.9 191.2	59.4 73.9 47.0 158.7 200.4	46.6 51.3 39.1  185.5
*Includes space for only.	25,790 a	a.f. for	flood s	torage
Note: Storage figur 5,360 a.f. of storage.				

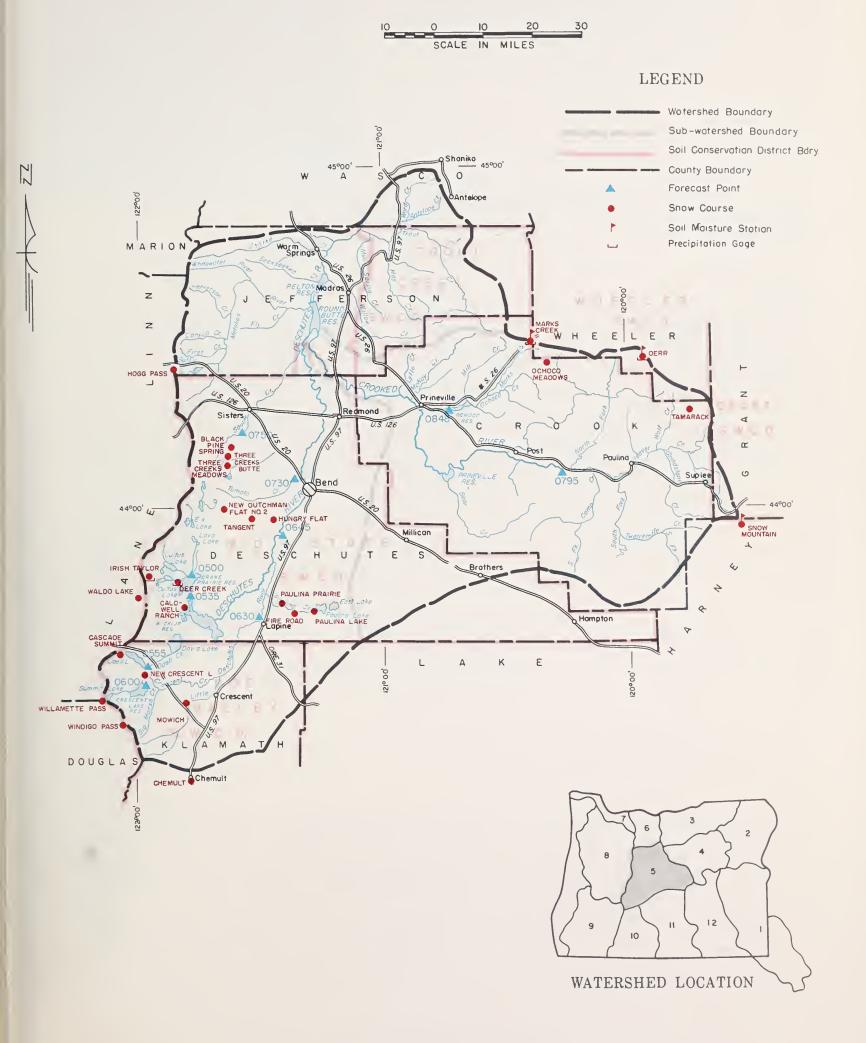
# STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of May 1, 1966

NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT. OF AVERAGE 1
0535	Crane Prairie Reservoir total Inflow	64	May-July	79	81
		102	May-Sept.	127	80
0600	Crescent at Crescent Lake <sup>d</sup>	16.7	May-July	22	76
		22	May-Sept.	29	7.5
0795	Crooked near Post	24	May-July	46	52
	,	25	May-Sept.	48	52
0645	Deschutes at Benham Falls <sup>d</sup>	244	May-July	328	74
		426	May-Sept.	541	79
0500	Deschutes below Snow Creek	47	May—Sept.	68	69
0630	Deschutes, Little near Lapined	75	April-July	99	76
		85	April-Sept.	113	7.5
0848	Ochoco Reservoir net Inflow	7.8	May-Sept.	16.5	47
0555	Odell near Crescent	26	April-Sept.	34	75
0750	Squaw near Sisters	47	April-Sept.	56	83
0730	Tumalo near Bend <sup>d</sup>	45	April-Sept.	54	83
,					

OIL MOISTURE		PROFILE (Inches)		SOIL MOISTURE (Inches)			
STATION		DEPTH	CAPACITY	DATE	THIS	LAST	2 YEARS
NAME	ELEVATION	1	OAI AOITT	DATE	YEAR	YEAR	AGO
Derr Marks Creek Snow Mountain	5670 4540 6300	24 36 48	9.0 14.1 16.7	3-28-66 4-29-66 3-29-66	8.5 f 13.2 f 12.3 f	13.6 15.9f	13.4

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# UPPER DESCHUTES, CROOKED WATERSHEDS



# Upper Deschutes, Crooked Watersheds

SNOW		CURRENT INFORMATION			PAST RECORD	
SNOW COURSE		DATE OF	SNOW DEPTH	WATER CONTENT	WATER CONTENT (Inches)	
NAME	ELEVATION	SURVEY	(Inches)	(Inches)	LAST YEAR	1948-62 AVERAGE
Black Pine Spring	4600	4/29	0	0.0	0.0	0.4 <sup>h</sup>
Caldwell Ranch	4400	c				
Cascade Summit	4880	4/29	52	23.8	18.6	28.6
Chemult	4760	4/27	0	0.0	0.0	0.6
Deer Creek	4554	c				
Derr	5670	с				,
Fire Road	5050	4/26	0	0.0	0.0	0.7 <sup>h</sup>
Hogg Pass	4755	4/29	93	43.5	32.1	46.9 <sup>h</sup>
Hungry Flat	4400	4/30	0	0.0	0.0	0.0
Trish Taylor	5500	С				_
Marks Creek	4540	4/29	0	0.0	0.0	T <sup>m</sup>
owich	4700	4/28	0	0.0	0.0	0.0
ew Crescent Lake	4800	4/27	0	0.0	0.0	5.6 <sup>h</sup>
ew Dutchman Flat #2	6400	4/30	89	48.0	63.2	57.7
choco Meadows	5200	с				,
aulina Lake	6330	4/26	22	10.5	21.8	18.1 <sup>h</sup>
aulina Prairie	4285	4/26	0	0.0	0.0	0.0
now Mountain	6300	c				
amarack	4800	С				,
angent	5400	4/30	22	11.8	2.8	12.5
hree Creeks Butte	5200	4/29	0	0.0	0.0	3.1
hree Creeks Meadows	5650	4/29	21	10.6	5.5	15.3
aldo Lake	5500	c				1_
illamette Pass	5600	4/27	84	39.4	39.6	45.4 <sup>h</sup>
indigo Pass	5800	4/28	72	33.3	46.1	48.8
			1		1	



# WATER SUPPLY OUTLOOK HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

**OREGON** 

*as of*MAY 1, 1966

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

### GENERAL OUTLOOK

Farmers of Hood River and Wasco Counties can expect near average water supplies the balance of this summer, except late season on the Mile Creeks where it is expected to be only fair. Precipitation continues to be extremely short and abnormal temperature conditions have melted off the snow at an unusually rapid rate.

### SNOW COVER

Water content of the mountain snowpack on Hood River-White River watersheds is about 92 percent average. On the Mile Creek watersheds, there is very little snow remaining at this time.

### SOIL MOISTURE

Moisture in the soil mantle is close to average for this date but can be greatly improved with a few good rains.

### RESERVOIR STORAGE

Stored water in Clear Lake Reservoir (Lake Wasco) is reported to be about 2.9 acre feet compared with 7,200 acre feet last year on this date. This should be a limited supply for the Juniper Flat Irrigation District. Rock Creek and Badger Reservoirs are not reported.

### STREAMFLOW

Forecasts of streamflow for the May through September period have been reduced about 11 to 12 percent from last month's estimates due to rapid snowmelt and drying conditions.

Flow of Hood River near Hood River is forecast at 87 percent of the 15-year average (1948-62) and the same value applies to the flow of the West Fork near Dee.

Flow of White River below tygh Valley is forecast at 90 percent average for the remaining months of the irrigation season.

Water supplies should be near average this season except for some late season shortages on the Mile Creeks.

# WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

# RESERVOIR STORAGE (1,000 Ac. Ft.)

Mav	1.	7 9	96	6

STREAM or AREA	FLOW I	PERIOD		RESERVOIR	USABLE	MEASUR	ED (First o	
STREAM OF AREA	SPRING SEASON	LATE SEASON			CAPACITY	THIS YEAR	LAST YEAR	1948-62 AVERAGE
Aldridge Ditch (Tony Creek) Badger Creek Dee Irrigation District East Fork Irrig. Dist. Farmers Irrigation Dist. Hood River Irrig. Dist. Juniper Flat Middle Fork Irrig. Dist. Mile Creeks Mill Creek Mount Hood Irrig. Dist. Rock-Gate-Threemile Crs. Tygh Creek White River	Spring peak flows are past.	Average Average Average Average Average Average Average Fair Fair Average Fair Average Fair Average		Clear Lake	11.8	2.9	7.2	

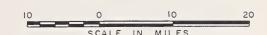
## STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of May 1, 1966

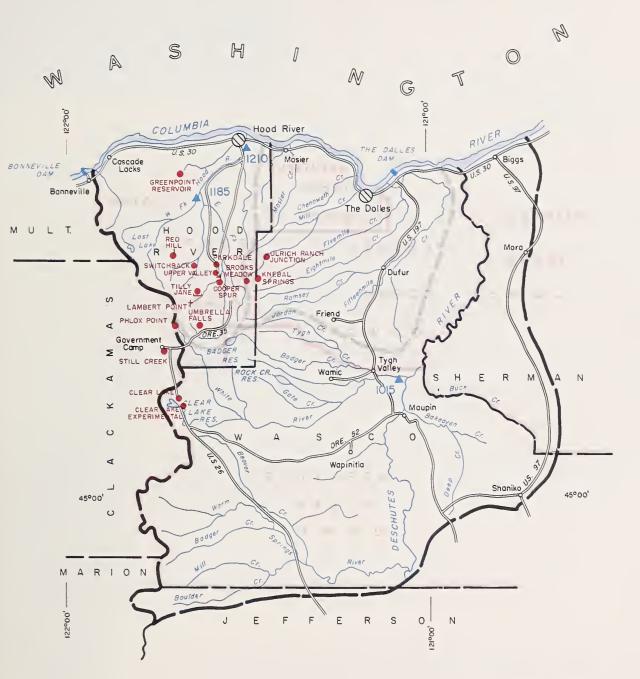
NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE <sup>1</sup>
1210 1185 1015	Hood near Hood River <sup>d</sup> Hood, West Fork near Dee  White below Tygh Valley	192 242 89 109 98 113	May-July May-Sept. May-July May-Sept. May-July May-Sept.	218 278 101 125 108 126	88 87 88 87 91 90

SNOW		CURRENT INFORMATION				PAST RECORD		
SNOW COURSE		DATE OF	SNOW DEPTH	WATER CONTENT	WATER CONTENT (Inches			
NAME	ELEVATION	SURVEY	(Inches)	(Inches)	LAST YEAR	1948-62 AVERAGE		
Brooks Meadows	4300	С						
Clear Lake	3500	4/29	13	5.6	1.8	7.2 <sup>h</sup>		
Clear Lake (Experimental)	3500	4/29	23	10.5	7.4			
Cooper Spur	3490	С						
Greenpoint Reservoir	3400	4/28	27	13.8	3.8			
Knebal Springs	3850	С						
Lambert Point	7000	С						
Parkdale	1770	С						
Phlox Point	5600	4/28	122	63.1	45.9	.71.1		
Red Hill	4400	С						
Still Creek	3700	4/28	48	22.8	13.0	20.7		
Switchback	3255	С						
Tilly Jane	6000	С						
Ulrich Ranch Junction	3350	С						
Umbrella Falls	5400	С						
Upper Valley	2530	С						

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

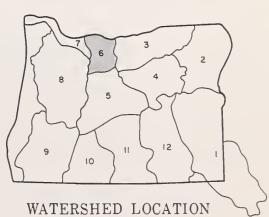
# HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS





### LEGEND

Wotershed Boundary
Sub-wotershed Boundary
Soil Conservation District Bdry.
County Boundary
Forecast Point
Snow Course
Aerial Snow Depth Gage
Soil Moisture Station
Precipitation Gage



Hood, Mile Creeks, Lower Deschutes Watersheds



# WATER SUPPLY OUTLOOK LOWER COLUMBIA WATERSHEDS OREGON

*as of* 

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

### GENERAL OUTLOOK

Water supply outlook in the Columbia Basin continued to decline during April, the third below average precipitation month. Forecasts of streamflow for the summer months are near average on the Columbia River main stem in Canada, slightly less than average as inflow to Grand Coulee and well below average for the Columbia at The Dalles. The forecast for May through June flow at The Dalles is 53,200,000 acre feet or 88 percent average. Flow in the lower basin below Portland will be roughly comparable to 1962 and 1963. Flows in the upper river will be adequate to fill major power and irrigation reservoirs during the snowmelt period.

Water supplies along the main Snake River in Idaho will be adequate at the expense of depleting reservoir storage to some degree. Snake River tributaries in western Idaho and eastern Oregon will experience some shortage except where larger reservoirs have supplemental water available.

### SNOW COVER

Remaining snowpack is below average except for the extreme northern section of the basin in British Columbia and along the Cascade Range in Oregon where near average late season snowpack was measured. Snow has melted very rapidly at low and medium elevations on Snake River tributaries and on lower Columbia tributaries in Oregon.

### SOIL MOISTURE

Soils are wet in the mountains because of snowmelt. With deficient precipitation in April, valley soils over the drainage are relatively dry. Early use of irrigation water has been required.

### STREAMFLOW

The flow of the Columbia at The Dalles, Oregon has been below average during the winter and spring months reflecting conditions over the basin. The record by months for The Dalles\* is as follows:

Month	Percent of A	verage [	Disch	arge (1948-	-62)
October	93 (A	djusted	for	storage)	
November	95	1f	99	00	
December	87	н	11	00	
January	92			99	
February	70	- 11	99		
March	87	11	11	M	
April	86	н	88	11	

<sup>\*</sup> Preliminary data from U. S. Geological Survey, Portland, Oregon.

# STREAMFLOW FORECASTS a(1,000 Ac. Ft.) as of May 1, 1966

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT. OF AVERAGE <sup>1</sup>
1057	Columbia at The Dalles	53,200 82,500	May-June May-Sept.	60,426 94,841	88 87

### HISTORICAL DATA (Columbia River at The Dalles)

VEAD		STREAMFLOWd(1,000 A.F.	.)	PEAK	5475
YEAR	APR SEPT.	APR. — JUNE	MAY - JUNE	(1,000 c.f.s )	DATE
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	<b>5</b> 36	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105.700	80,500	67,200	700	May 22
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,000	64,000	48,000	442	June 6
1961	101,400	74,400	64,000	699	June 8
1962	94,600	64,100	49,200	460	June 5
1948-62 Avg.	108,500	74,100	60,200	633	
1963	87,000	56,300	46,200	437	June 18
1964	109,020	70,739	61,313	662	June 18

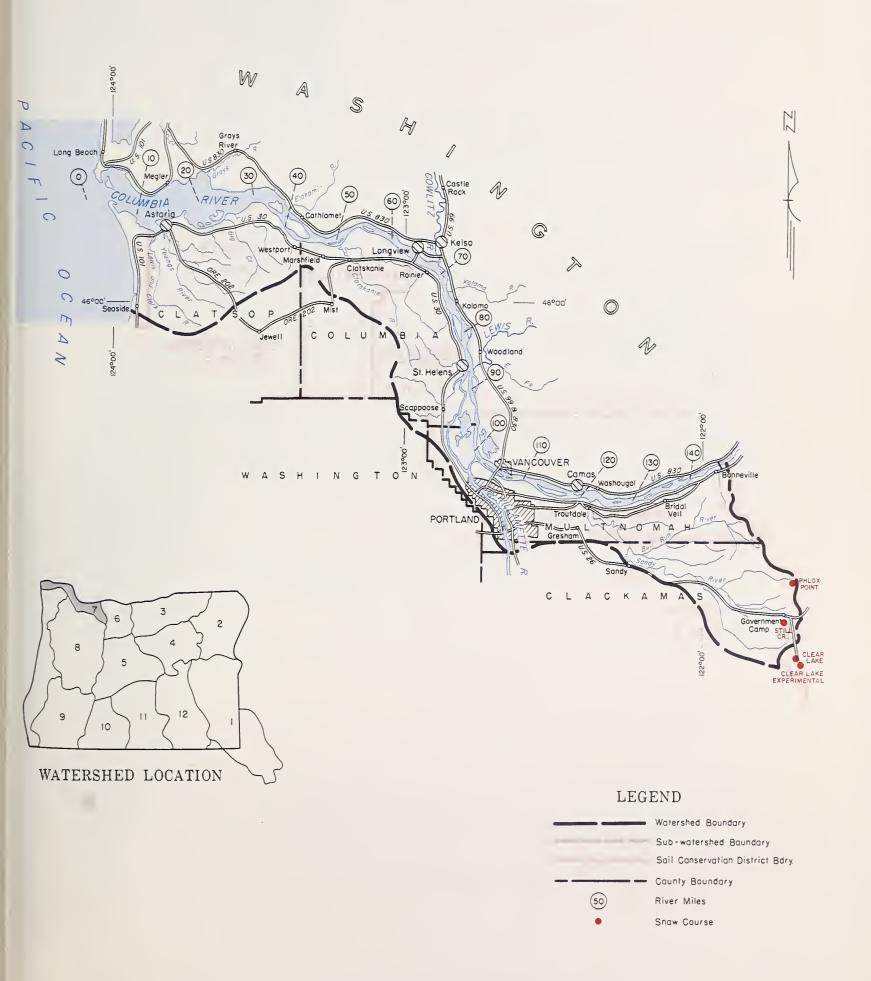
# LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)

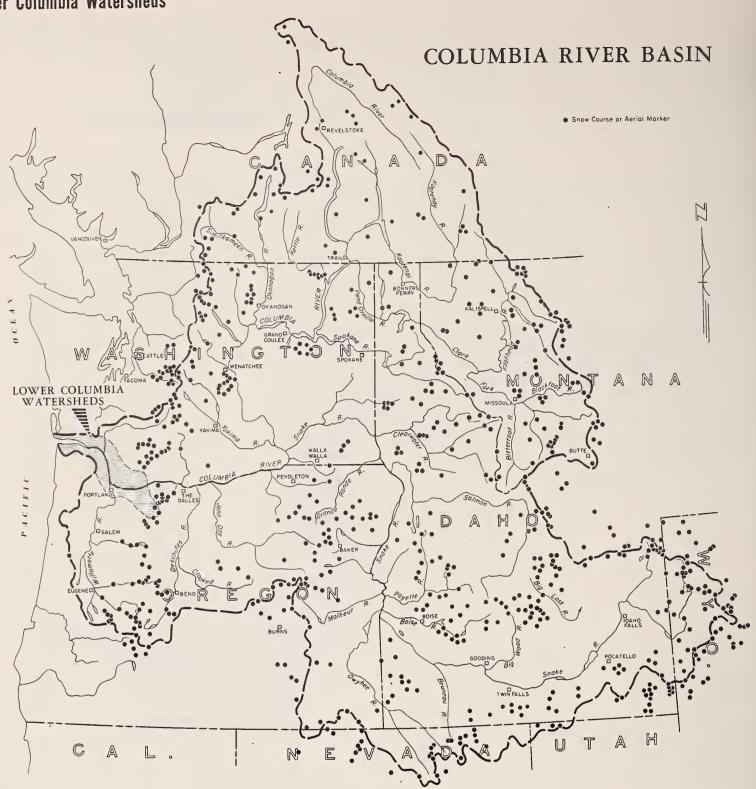
				DRAINA	SE DISTRICT PUMP	HOUSE		
VANCOUVER	FLOW AT	SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
GAGE	THE DALLES				RIVER MILES			
(Weather Bu.)	(1,000 c.f.s)	118,9	96.0	91.0	77, 0	62.0	52.0	47. 0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	943	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	897	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	853	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	811	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	771	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	733	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	697	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	662	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	628	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	595	27.2	20.7	19.5	16.4	12.6	10.6	. 9.6
					1011			
20 (1954)	564	26.2	19.8	18.6.	15.5	12.1	10.2	9.4
19	534	25.5	19.2	18.0	15:0	11.8	10.0	9.3
18	501	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	479	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	452	22.4	16.5	15.5	13.0	10.5	9.3	8.7

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

# LOWER COLUMBIA WATERSHEDS









# WATER SUPPLY OUTLOOK WILLAMETTE WATERSHEDS OREGON

as of

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

### GENERAL OUTLOOK

The outlook for summer water supplies in Willamette Valley is good, even though precipitation during April was less than half of the average.

### SNOW COVER

Water content of the mountain snowpack is about 92 percent of the 15-year average (1948-62) for May 1, and 60 percent greater than last year on this date.

Snowmelt has been unusually rapid and continuous at median elevations. Melt began on March 25th at Peavine Snow Gage, at elevation 3500 feet, with a total of 27.7 inches then in the snow. On May 6th, 42 days later, only 5.9 inches of water remained in the snowpack. Thus, a total melt of 21.8 inches of water has occurred at the rate of about .52 inch per day. Several days melted 1.5 inches of water from the snow at the maximum.

### SOIL MOISTURE

Moisture in the soil mantle in the upper watersheds is near capacity but at median and valley elevations, moisture is needed for crops and orchards.

### RESERVOIR STORAGE

Total water stored in eight multipurpose reservoirs on the Willamette is 94 percent of the May 1 average and 104 percent of last year on May first.

### STREAMFLOW

Forecasts of all Willamette streams have been reduced from 3 to 17 percent because of short precipitation and snowpack losses.

April through September streamflow is forecast as follows: 90 percent of the 15-year average (1948-62) on the Clackamas River, 95 percent on the North Santiam, 87 percent on the South Santiam, 93 percent on the Middle Fork of the Willamette and 94 percent for the Row River on the Coast Fork.

Flow of the Willamette at Salem is forecast at 4,925,000 acre feet or 88 percent average for the six months, April through September.

## WATER SUPPLY OUTLOOK expressed as "Paar", "Fair" "Average" or "Excellent"

WAIER SUPPLY UUILUUN "Average" or "Excellent"					
STREAM or AREA	FLOW PERIOD				
STITEAU OF AIREA	SPRING SEASON	LATE SEASON			
Calapooya Clackamas McKenzie Molalla Santiam, North Santiam, South Willamette, Coast Fork Willamette, Middle Fork	Spring peak flows are past.	Average Average Average Average Average Average Average Average			

## RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1966

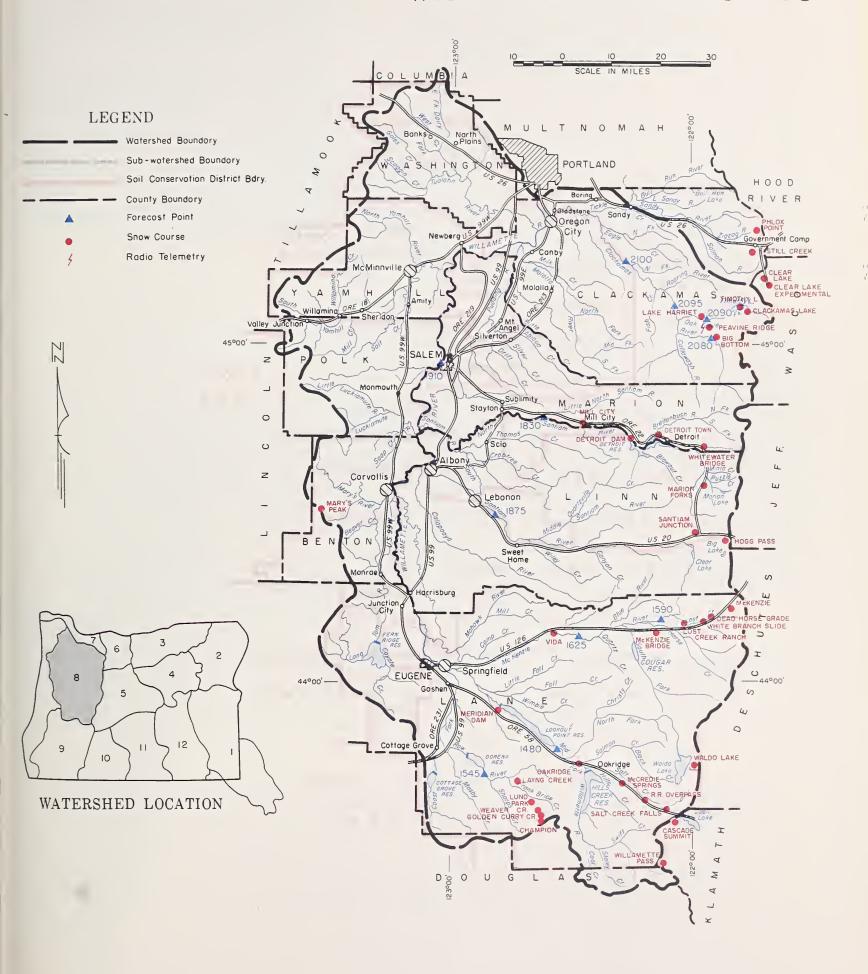
ALBERTOIR STURAGE	(1,000	NO. 1	riay 1,	1300
RESERVOIR	USABLE	MEASUR	ED (First o	
	CAPACITY	THIS YEAR	LAST YEAR	1948-62 AVERAGE
Cottage Grove	30.0*	21.2	23.7	25.4
Cougar	155.2*	120.5	104.1	
Detroit	299.9*	237.4	272.3	228.9"
Dorena	70.5*	49.2	49.5	53.6"
Fall Creek	115.0*	93.6		
Fern Ridge	94.2*	87.2	56.2	86.2
Hills Creek	200.0*	170.8	166.3	
Lookout Point	337.2*	227.7	207.6	271.2
Timothy Lake	61.7	59.3	61.7	54.4
*Multiple purpose reservoirspace reserved primarily for flood control.				

## STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of May 1, 1966

FORECAST POINT NO. NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT. OF AVERAGE 1
Clackamas at Big Bottom  Clackamas at Estacada  Clackamas above Three Lynx  Some McKenzie at McKenzie Bridge  McKenzie near Vida  Coak Grove Fork above Power Intake  Row near Dorena  Santiam, North at Mehamad  Santiam, South at Waterloo  Willamette, Mid. Fk. blw. N. Fk. nr. Cakridged  Willamette at Salemd	135 170 700 800 545 625 445 580 1075 1300 140 180 103 105 850 945 560 590 811 900 4390 4925	April-July April-Sept.	150 184 770 890 584 683 502 658 1144 1392 147 190 108 112 884 991 637 675 863 968 5040 5566	90 92 91 90 93 92 89 88 94 93 95 95 95 94 96 95 88 87 94 93 88

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or mes years in base period.

# WILLAMETTE WATERSHEDS



SNOW		CURE	RENT INFORMA	TION	PAST R	ECORD
SNOW COURSE		DATE OF	SNOW DEPTH	WATER CONTENT	WATER CONT	ENT (Inches)
NAME	ELEVATION	SURVEY	URVEY (Inches) (Inches)		LAST YEAR	1948-62 AVERAGE
Big Bottom	2118	4/29	0	0.0	0.0	1.3 <sup>h</sup>
Cascade Summit	4880	4/29	52	23.8	18.6	28.6
Champion	4500	4/29	61	28.7	9.7	20.0
Clackamas Lake	3400	c		2017	· · ·	
Clear Lake	3500	4/29	13	5.6	1.8	7.2 <sup>h</sup>
Clear Lake (Experimental)	3500	4/29	23	10.5	7.4	
Dead Horse Grade	3800	5/2	23	10.1	3.0	13.4.
Detroit Town	1610	4/29	0	0.0	0.0	0.0 <sup>h</sup>
Detroit Dam	1580	4/29	0	0.0	0.0	0.0
Golden Curry Creek	3136	4/29	0	0.0	0.0	
Hogg Pass	4755	4/29	93	43.5	32.1	46.9 <sup>h</sup>
Lake Harriet	2045	c			52.12	10.0
Layng Creek	1200	4/29	0	0.0	0.0	
Lost Creek Ranch	1956	5/2	0	0.0	0.0	0.0 <sup>h</sup>
Lund Park	1740	4/29	0	0.0	0.0	
Marion Forks	2730	4/29	14	8.1	0.0	3.9 <sup>h</sup>
Marys Peak	3620	5/1	21	10.4	1.1	
McCredie Springs	2120	4/29	0	0.0	0.0	0.0 <sup>h</sup>
McKenzie	4800	5/2	82	43.5	40.8	51.6 <sup>h</sup>
McKenzie Bridge	1372	5/2	0	0.0	0.0	0.0,
Meridian Dam	750	4/29	0	0.0	0.0	0.0
Mill City	826	4/29	0	0.0	0.0	0.0,
Oakridge	1310	4/29	0	0.0	0.0	0.0
Peavine Ridge	3500	4/29	47	22.5	7.1	16.6 <sup>h</sup>
Phlox Point	5600	4/28	122	63.1	45.9	71.1
Railroad Overpass	2750	4/29	0	0.0	0.0	0.1 <i>h</i>
Salt Creek Falls	4000	4/29	33	15.1	T	11.4 <sup>h</sup>
Santiam Junction	3990	4/29	22	10.6	0.0	15.0h
Still Creek	3700	4/28	48	22.8	13.0	20.7
Timothy Lake	3295	c		22.0	10.0	2017
Vida	800	5/2	0	0.0	0.0	0.0 <sup>h</sup>
Waldo Lake	5500	c				
Weaver Creek	2440	4/29	0	0.0	0.0	
White Branch Slide	2800	5/2	Ö	0.0	0.0	2.1 <sup>h</sup>
Whitewater Bridge	2175	4/29	0	0.0	0.0	Th
Willamette Pass	5600	4/27	84	39.4	39.6	45.4 <sup>h</sup>
RADIO	I D REPORTS E	I BY AUTOMATIC	i C SNOW-MEAS	URING STAT	IONS	
			Time			
Peavine Ridge	3500	5/1	8:19 a.m.	11.8		
Phlox Point	5600	5/1	8:47 a.m.	61.8		



# WATER SUPPLY OUTLOOK ROGUE, UMPQUA, WATERSHEDS OREGON

as of

U. S. D. A. SOIL CONSERVATION SERVICE OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

### GENERAL OUTLOOK

The outlook for summer water supplies in the Umpqua-Rogue area remains good, even though precipitation during April was about half normal and snowmelt has been unusually rapid.

### SNOW COVER

Water content of the mountain snowpack is about 70 percent of the May 1 average on the Umpqua watersheds and 82 percent on the Rogue.

The rapid rate of snowmelt this season is demonstrated by the "loss" of water from the snowpack during last month at the following two snow courses: Trap Creek course at 3800 feet elevation on the Umpqua near Toketee lost 19.1 inches of water, and Silver Burn snow course at 3720 feet on the Crater Lake highway above Union Creek resort lost 21.1 inches of water in the same period.

### SOIL MOISTURE

Moisture in the soil mantle at upper elevations is near capacity as a result of snowmelt. However, valley lands and some other low-elevation areas are already quite dry and in need of rain.

### RESERVOIR STORAGE

Stored water supplies in reservoirs serving the Medford and Rogue River Valley Irrigation Districts are 111 percent average and total 18,700 acre feet, compared with 23,700 acre feet one year ago.

Talent Irrigation District has stored water totaling 101,800 acre feet or 109 percent average compared with 114,600 on May 1 last year.

### STREAMFLOW

Forecasts of streamflow in southwestern Oregon have been reduced some 5 to 25 percent from last month's estimates but expected flows remain close to average.

The North Umpqua below Lemolo Reservoir is forecast at 91 percent of the 15-year average (1948-62) for the April through September period.

On the Rogue area, the Applegate is forecast to flow 120 percent average and the Illinois 113 percent for April through September. Rogue above Prospect, Rogue below South Fork and Rogue at Raygold are forecast at 98, 97, and 96 percent average, respectively, for the period, May through September.

Unless conditions get worse, there will be no need for canal rotation in the operations of the Grants Pass Irrigation District.

Eagle Point Irrigation District should have an average water supply from Big Butte Creek this season.

W.T. FROST AND BOB L. MHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. MASHINGTON ST.
PORTLAND, OREGON 97205

# WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

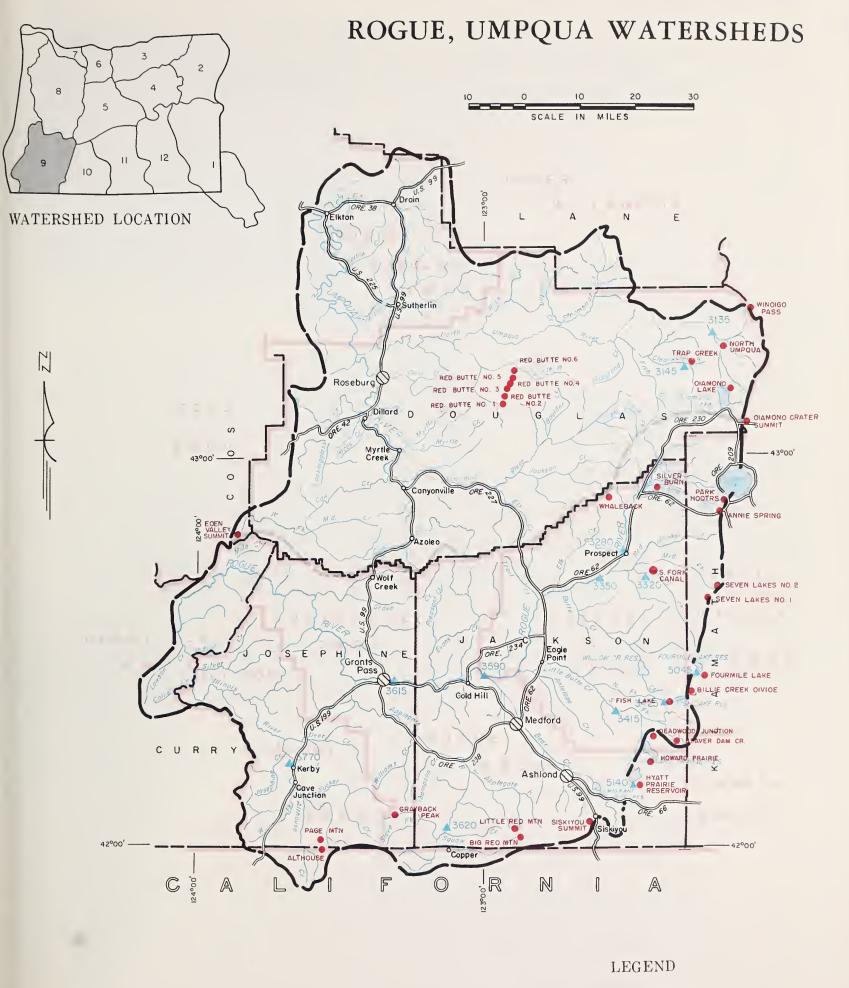
### RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1966

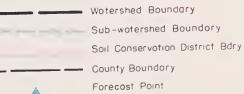
STREAM or AREA	FLOW	PERIOD	RESERVOIR	USABLE	MEASURED (First of			
STREAM OF AREA	SPRING SEASON	LATE SEASON	RESERVOIR	CAPACITY	THIS YEAR	LAST YEAR	1948-61 AVERAG	
Althouse Creek Applegate River, Big Applegate River, Little Ashland Creek Butte Creek, Little Butte Creek, Big Cow Creek Deer Creek Elk Creek Emigrant Creek (abv. Res.) Evans Creek Gold Hill Irrigation Dist. Grants Pass Irrig. Dist. Grave Creek Illinois River, East Fork Illinois River, West Fork Jump-off-Joe Creek Neil Creek Red Blanket Creek Rogue River Sucker Creek Table Rock Irrig. Dist. Thompson Creek Wagner Creek Williams Creek	Spring peak flows are past	Average	Emigrant Gap Fish Lake Fourmile Lake Howard Prairie Hyatt Prairie  *Average for years of record after reconstruction.	39.0 7.8 16.1 60.0 16.1	36.1 7.4 11.3 50.7 15.0	37.4 8.1 15.6 60.6 16.6	36.6.10.12.	

# STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of May 1, 1966

	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT.
NO.	NAME	THIS TEAK			OF AVERAGE 1
3620	Applegate near Copper	170	April-Sept.	142	120
3145	Clearwater above Trap Creek $^d$	60	May-Sept.	62	97
5045	Fourmile Lake net Inflow'd	6.0	April-Sept.	6.6	91
5140	Hyatt Reservoir net Inflowd	3.2	May-Sept.	3.4	94
3770	Illinois River at Kerby	235	April-July	206	114
	,	240	April-Sept.	212	113
3425	Little Butte, N. Fk. at Fish Lake nr. Lake Cr.d	16.0	April-Sept.	16.0	100
3415	Little Butte, So. Fk. nr. Lake Creek	40	April-July	38	105
	Note: Minimum flow will drop to 100 c.f.s.				
0000	by May 30.	93.0	M T1	01.0	99
3280	Rogue above Prospect	210 267	May-July May-Sept.	212 272	98
3320	Rogue, South Fork near Prospect <sup>d</sup>	50	May-July	52	97
3320	Rogue, South Fork hear Prospect	61	May-Sept.	64	96
3350	Rogue River below South Fork	435	May-July	443	98
1 0000	Nogue Mivel below bodem lolk	570	May-Sept.	586	97
3590	Rogue at Raygold near Central Point	550	May-July	567	97
	negati da najgoza negati contata a conta	700	May-Sept.	730	96
3615	Rogue at Grants Pass	670	May-Sept.	700	96
3135	Umpqua, No. klw. Lemolo Res. nr. Toketee Falls $^d$	170	April-Sept.	186	91

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.





Snow Course

SNOW		CURI	RENT INFORMA	TION	PAST RECORD		
SNOW COURSE		DATE OF	SNOW DEPTH	WATER	WATER CONT	ENT (Inches)	
NAME	ELEVATION	SURVEY	(Inches)	CONTENT (Inches)	LAST YEAR	1948-62 AVERAGE	
Althouse	4530	С					
Annie Spring	6018	4/29	88	44.2	45.3	45.4	
Beaver Dam Creek	5100	C			10.0	10.1	
Big Red Mountain	6500	с					
Billie Creek Divide	5300	4/29	8	2.6	2.1	16.8 <sup>h</sup>	
Caliban	6500	Ь				2000	
Champion	4500	4/29	61	28.7	9.7		
Cold Springs Camp	6100	4/25	55	25.4			
Deadwood Junction	4600	c					
Diamond Crater Summit	5800	4/26	65	31.0	36.5		
Diamond Lake	5315	4/26	35	16.6	12.1	18.0	
Eden Valley Summit	2390	С			-7:-		
Fish Lake	4865	С					
Fourmile Lake	6000	С					
Grayback Peak	6000	с					
Howard Prairie	4500	c			•		
Hyatt Prairie Reservoir	4900	с					
King Mountain #1	4800	Not	surveyed				
King Mountain #2	3646		surveyed				
King Mountain #3	2550		surveyed				
King Mountain #4	1779		surveyed				
Little Red Mountain	6500	1					
Mt. Ashland Switchback	6400	$rac{c}{ar{b}}$					
North Umpqua	4215	4/27	6	2.8	Т	5.3 <sup>m</sup>	
Page Mountain	4045	С					
Park. Headquarters	6450	4/29	103	54.5	75.0	60.8	
Red Butte #1	4560	4/28	17	9.0	T		
Red Butte #2	4000	4/28	0	0.0	0.0		
Red Butte #3	3500	4/28	0	0.0	0.0		
Red Butte #4	3000	4/28	0	0.0	0.0		
Red Butte #5	2500	4/28	0	0.0	0.0		
Red Butte #6	2000	4/28	U	0.0	0.0		
Seven Lakes #1	6800	С					
Seven Lakes #2	6200	С				,	
Silver Burn	3720	4/28	0	0.0	0.0	2.9 <sup>h</sup>	
Siskiyou Summit	4630	С					
Ski Bowl Road	6000	b					
South Fork Canal	3500	4/28	0	0.0	0.0	0.0	
Trap Creek	3800	4/27	2	1.0	Т	5.9h	
Whaleback	5140	С				,	
Windigo Pass	5800	4/28	72	33.3	46.1	48.8 <sup>h</sup>	



# WATER SUPPLY OUTLOOK KLAMATH WATERSHEDS OREGON

*as of*MAY 1, 1966

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

### GENERAL OUTLOOK

The outlook for summer water supplies in Klamath Basin is about average except for the upper Williamson and Sprague Rivers where the outlook is fair with some late-season shortages expected.

### SNOW COVER

Water content of the mountain snowpack is 79 percent of the 15-year average (1948-62) and 85 percent of last year on this date. Ten of the 18 snow courses measured had no snow on May 1.

### SOIL MOISTURE

Moisture in the top four feet of the soil mantle is about 88 percent of capacity in the upper watersheds, but at valley locations soils are drying out rapidly.

### RESERVOIR STORAGE

Stored water supplies are excellent in the Klamath Basin, partly due to the excellent carryover of water from last season's operations. Gerber Reservoir now holds 70,700 acre feet compared with 88,800 acre feet last year and an average May 1 figure of 60,000 acre feet. Clear Lake Reservoir has 243,000 acre feet compared with 302,900 acre feet last year and an average of 256,100 acre feet.

Upper Klamath Lake contains 501,300 acre feet compared with 490,800 acre feet last year and 518,200 acre feet, the May first average.

### STREAMFLOW

Forecasts of streamflow in the basin have been reduced some from figures provided last month. The expected streamflow, May through September, is 10,000 acre feet or 57 percent of the 15-year average (1948-62) into Clear Lake Reservoir, 4,000 or 65 percent average into Gerber Reservoir.

Inflow to Upper Klamath Lake for the same period, May through September, is forecast at 315,000 acre feet or 72 percent average. The contribution from the Williamson River below Sprague River is forecast at 255,000 acre feet or 76 percent average. Sprague River alone is forecast at 140,000 acre feet or 74 percent average.

Net inflow to Upper Klamath Lake\* during April was 90 percent average and the total inflow since October first has been 88 percent average.

\* Preliminary data from Pacific Power and Light Company, Portland, Oregon.

# WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

### RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1966

			 	.,,			
STREAM or AREA	FLOW	PERIOD	RESERVOIR	USABLE	MEASUR	ED (First o	f Month)
	SPRING SEASON	LATE SEASON	REGERVOIR	CAPACITY	THIS YEAR	LAST YEAR	1948-62 AVERAGE
Ft. Klamath Valley Lost River (Clear Lake) Lost River (Gerber) Lost River (Willow Res.) Sprague River Upper Klamath Lake Williamson River	Spring peak flows are past.	Average Average Average Average Fair Average Fair	Clear Lake Gerber Upper Klamath Lake	440.2 94.0 584.0	243.0 70.7 501.3	302.9 88.8 490.8	256.1 60.0 518.2

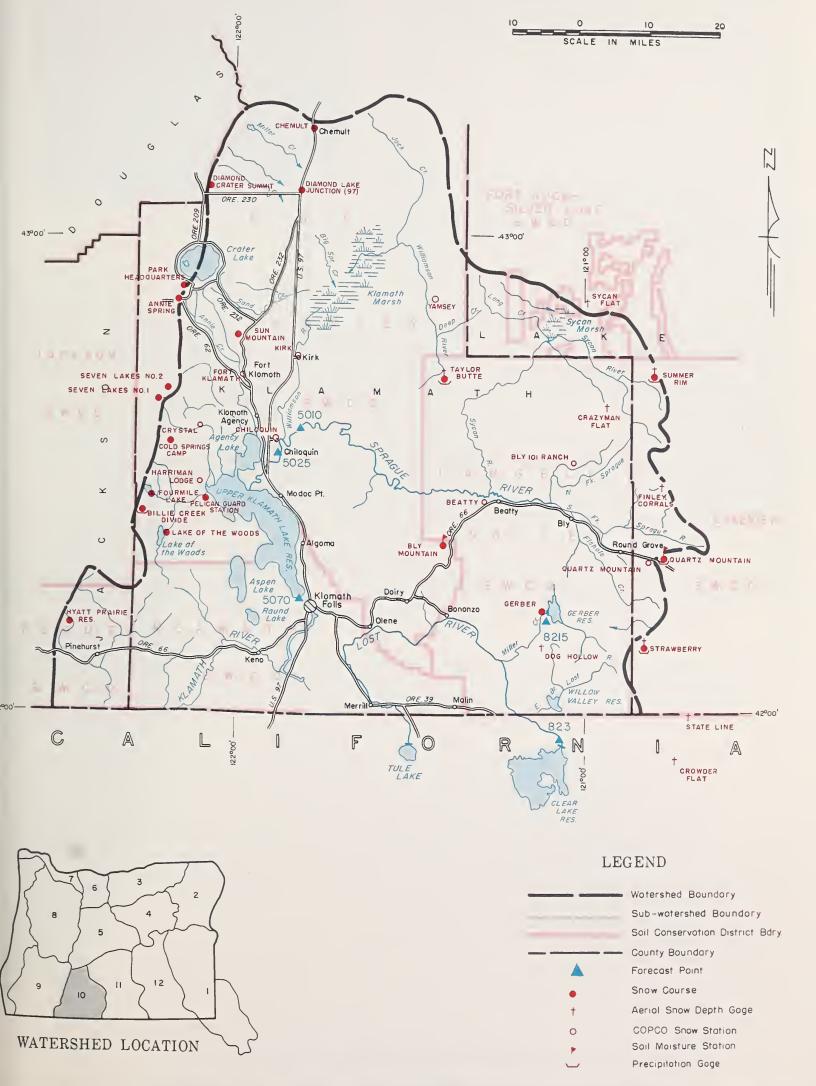
### STREAMFLOW FORECASTS a (1.000 Ac. Ft.) as of May 1, 1966

FORECAST POINT  NO. NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCEN OF AVERAG	
Clear Lake Reservoir Inflow <sup>k</sup> Gerber Reservoir Inflow <sup>k</sup> Sprague near Chiloquin Upper Klamath Lake net Inflow <sup>k</sup> Williamson below Sprague River	10.0 4.0 140 315 255	May-Sept. May-Sept. May-Sept. May-Sept. May-Sept.	17.4 6.2 190 438 336	57 65 74 72 76	

L MOISTURE		PROFILE (Inches) SOIL MOISTURE (Inches)					
STATION		DEPTH	CAPACITY	DATE	THIS		2 YEAR
NAME	ELEVATION				YEAR	YEAR	AGO
Bly Mountain	5090	42	14.0	4-28-66	12.3	12.5	12.6
					·		

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# KLAMATH WATERSHEDS



# Klamath Watersheds

SNOW		CURI	RENT INFORMA	TION	PAST RECORD		
SNOW COURSE		DATE OF	SNOW DEPTH	WATER	WATER CONT	ENT (Inches)	
NAME	ELEVATION	SURVEY	(Inches)	CONTENT (Inches)	LAST YEAR	1948-62 AVERAGE	
Annie Spring	6018	4/29	88	44.2	45.3	45.4	
Beatty (PP&L)	4300	Ь				,	
Billie Creek Divide	5300	4/29	8	2.6	2.1	16.8 <sup>h</sup>	
Bly Mountain	5090	4/28	0	0.0	0.0	0.0	
Bly 101 Ranch (PP&L)	4800	b		: .		- m	
Chemult	4760	4/27	0	0.0	0.0	0.6 <sup>m</sup>	
Chiloquin (PP&L)	4187	b		05.4			
Cold Springs Camp	6100	4/25	55	25.4			
Crazyman Flat <sup>e</sup> Crowder Flat <sup>e</sup> (Calif.)	6100 5200	4/25 c	0	0.0		one pay	
Crystal (PP&L)	4200	b					
Diamond-Crater Summit	5800	4/26	65	31.0	36.5		
Diamond Lake Junction (97)	4600	4/26	0	0.0	0.0	~ -	
Dog Hollowe	4900	c 2/20		0.0	0.0		
Finley Corrals <sup>e</sup>	6000	4/25	0	0.0			
Fort Klamath (PP&L)	4150	b	Ĭ	0.0			
Fourmile Lake	6000	c					
Gerber	4850	с					
Harriman (PP&L)	4200	$\bar{b}$					
Hyatt Prairie Reservoir	4900	с					
Kirk (PP&L)	4533	$\widetilde{b}$					
Lake of the Woods	4960	4/26	5	2.0 .	Т	6.3 <sup>h</sup>	
Park Headquarters	6450	4/29	103	54.5	75.0	60.8	
Pelican Guard Station	4150	4/29	0	0.0		<sub>h</sub>	
Quartz Mountain	5320	4/29	0	0.0	0.0	$0.1\frac{h}{m}$	
Quartz Mountain (PP&L)	5504	4/29	0	0.0	0.0	0.0	
Seven Lakes #1	6800	С					
Seven Lakes #2	6200	С					
State Line <sup>e</sup> (Calif.)	5750	c		0.0	0.0	0.4h	
Strawberry Summer Rim	5760 7200	4/25 4/25	0	0.0 6.0	0.0	U.4"	
Sun Mountain	5350	4/25	12 39	16.4			
Sycan Flate	5500	c 4/20	39	10.4			
Taylor Butte	5100	4/28	0	0.0			
Yamsey (PP&L)	4600	h		0.0			
Tambey (ITab)	1000	Ů					



# WATER SUPPLY OUTLOOK LAKE COUNTY, GOOSE LAKE WATERSHEDS OREGON

*as of* MAY 1, 1966

U. S. D. A. SOIL CONSERVATION SERVICE OREGON STATE ENGINEER

### GENERAL OUTLOOK

Ranchers in Lake County can expect critically short water supplies this summer except where adequate stored water is available or where water can be pumped. Precipitation has been below average and periods of abnormal temperature and winds have melted off most of the snowpack and dried the soils in the valleys and lower elevations.

### SNOW COVER

Seven snow courses were measured as of May first and five of them were bare of snow. Water content of the remaining snowpack, as measured at Patton Meadows (6800 feet) and Summer Rim (7200 feet elevation), is 5.0 and 6.0 inches, respectively.

### SOIL MOISTURE

Moisture in the top four feet of the soil mantle in the higher watersheds is close to saturation. At Quartz Mountain and Camas Creek stations on highway summits west and east of Lakeview, the moisture in the soil measures 74 percent of capacity. Valley soils are drying rapidly.

### RESERVOIR STORAGE

Stored water supplies in Cottonwood and Drews Valley Reservoirs total 67,400 acre feet, compared with 75,800 acre feet last year and the May first average of 53,000 acre feet. This is a very satisfactory supply for Lakeview Water Users Association.

### STREAMFLOW

Forecasts of streamflow in Lake County have been reduced about 3 to 10 percent since the estimates of April first and are now estimated as follows:

Flow into Drews Valley Reservoir is forecast to be 7,000 acre feet or 61 percent of the 15-year average (1948-62) May through September. Deep Creek, Honey Creek and Twentymile Creek are forecast at 62, 50 and 44 percent average for the April through September period.

Flow of Chewaucan River is forecast at 65 percent average for the six months, April through September.

OR-11a

# WATER SUPPLY OUTLOOK expressed os "Poor", "Foir" "Average" or "Excellent"

## RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1966

STREAM or AREA	FLOW	PERIOD
OTTEAM OF AIRE	SPRING SEASON	LATE SEASON
Chewaucan Crooked Creek Deep Creek Dry Creek East Side Goose Lake Guano Lake Honey Creek Lakeview Water Users Assn. Rock Creek (Hart Mtn.) Silver-Buck Creeks Summer Lake Thomas Creek Twentymile Creek Warner Lakes	Spring peak flows are past.	Poor Poor Poor Poor Poor Poor Average Poor Poor Poor Poor Poor Poor Poor

RESERVOIR	USABLE	MEASUR	ED (First o	f Month)
RESERVOIR	CAPACITY	THIS YEAR	LAST YEAR	1948-62 AVERAGE
Cottonwood Drews	8.7 63.0	4.0 63.4	8.4 67.4	7.1* 53.0
*Average for years of record after reconstruction.				

# STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of May 1, 1966

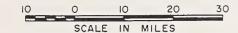
NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT. OF AVERAGE 1
3840	Chewaucan near Paisley	51	April-June	79	65
		57	April-Sept.	88	65
3715	Deep above Adel	43.	April-June	68	63
	·	45	April-Sept.	72	62
3385	Drews Reservoir net Inflow <sup>d</sup>	7.0	May-Sept.	11.4	61
3785	Honey near Plush	7.8	April <b>-</b> June	15.6	50
		8.0	April-Sept.	16.1	50
3660	Twentymile near Adel	9.2	April <b>-</b> June	21	44
		9.7	April-Sept.	22	44

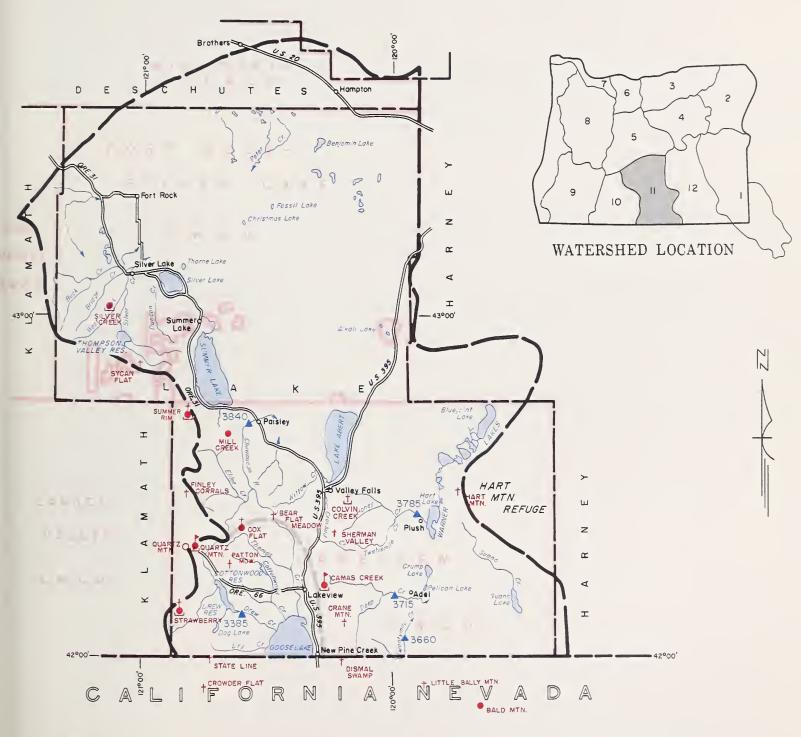
SOIL MOISTURE		PROFILE	(Inches)		SOIL MOISTU	RE (Inches)	
STATION	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Camas Creek Quartz Mountain	5720 5320	42 48	14.5 15.3	4-27-66 4-29-66	13.1	13.2 10.4	13.1

SNOW		CUR	RENT INFORMA	TION	PAST RECORD	
SNOW COURSE		DATE OF	SNOW DEPTH	WATER CONTENT	WATER CONTENT (Inches	
NAME	ELEVATION	SURVEY	(Inches)	(Inches)	LAST YEAR	1948-62 AVERAGE
Bald Mountain (Nev.)	6720	С				
Bear Flat Meadow <sup>e</sup>	5900	С				
Camas Creek	5720	4/27	0	0.0		
Colvin Creek <sup>e</sup>	6550	c				
Cox Flate	5750	С				
Crane Mountaine	6020	c				
Crowder Flat <sup>e</sup> (Calif.)	5200	С				
Dismal Swamp <sup>e</sup> (Calif.)	7000	с				,
Finley Corrals <sup>e</sup>	6000	4/25	0	0.0		
Hart Mountaine	6350	c				
Little Bally Mountain <sup>e</sup> (Nev.)	6600	С				
Mill Creek	6200	c				
Patton Meadows <sup>e</sup>	6800	4/25	10	5.0		
Quartz Mountain (PP&L)	5504	4/29	0	0.0	0.0	0.0
Quartz Mountain	5320	4/29	0	0.0	0.0	0.1 <sup>h</sup>
Sherman Valley <sup>e</sup>	6600	С				
Silver Creek	4900	c				
State Line <sup>e</sup> (Calif.)	5750	С				h
Strawberry	5760	4/25	0	0.0	0.0	0.4
Summer Rim	7200	4/25	12	6.0		
Sycan Flate	5500	С				
Sycan Flate	5500	С				

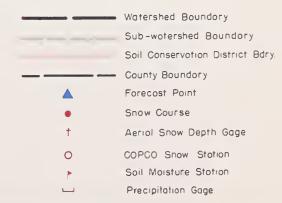
<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# LAKE COUNTY, GOOSE LAKE WATERSHEDS





### LEGEND



Lake County, Goose Lake Watersheds



# WATER SUPPLY OUTLOOK HARNEY BASIN WATERSHEDS OREGON

*as of* 

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

### GENERAL OUTLOOK

The summer water supply outlook in Harney Basin is very poor. The snowpack has disappeared at a very fast rate and streams have not risen as high as expected due to low precipitation and dry soils.

### SNOW COVER

Six snow courses measured near May 1 in the north end of the basin had no snow and only scattered drifts on protected north slopes remain on the Steens. The lack of precipitation, coupled with windy days and abnormal temperatures, has caused snow to disappear at a much faster rate than usual.

### SOIL MOISTURE

Soils higher on the watersheds picked up moisture from snowmelt and are now 84 percent o capacity in the north end of the basin and 81 percent in the south. Lower elevation and valley soils have dried out in the top few inches. Range lands are poor and need moisture greatly.

### RESERVOIR STORAGE

Most reservoirs did not receive inflows expected due to the lack of precipitation and the soils soaking up snowmelt water.

### STREAMFLOW

Reports indicate that Harney County streams are receding even faster than expected.

Forecasts of streamflow for the April-September period range from 45 to 48 percent of the 1948-62 average period.

The Silvies River is expected to flow 45,000 acre feet or 45 percent. This volume of water would compare just a little better than 1955 and a little less than the amount received in 1964. Silver Creek is forecast to flow 10,800 acre feet or 49 percent of average for the April through June period.

The Blitzen is forecast to flow 30,000 acre feet or 48 percent of average and Trout Creek is expected to flow 4,000 acre feet or 48 percent of average.

Streams heading at lower elevations are expected to recede much earlier than usual unless above average precipitation improves conditions very soon.

## WATER SUPPLY OUTLOOK expressed os "Poor", "Foir" "Average" or "Excellent"

RESERVOIR	STORAGE	(1,000	Ac. Ft	t.)	May	1,	1966
-----------	---------	--------	--------	-----	-----	----	------

STREAM or AREA	FLOW	PERIOD	RE	
STREAM OF AREA	SPRING SEASON	LATE SEASON	, AL	
Catlow Valley Cow Creek Donner und Blitzen River Mill-Coffeepot Creeks Rattlesnake Creek Silver Creek Silvies River Soldier-Prather Creek Trout Creek Whitehorse Creek	Spring peak flows are past.	Poor Poor Poor Poor Poor Poor Poor Poor		

KESEKANIK SINKARE	(1,000	AC. Ft.	May 1,	1966	
RESERVOIR	USABLE	MEASURED (First of Month)			
RESERVOIR	CAPACITY	THIS YEAR	LAST YEAR	1948-62 AVERAGE	
	1				
		1			

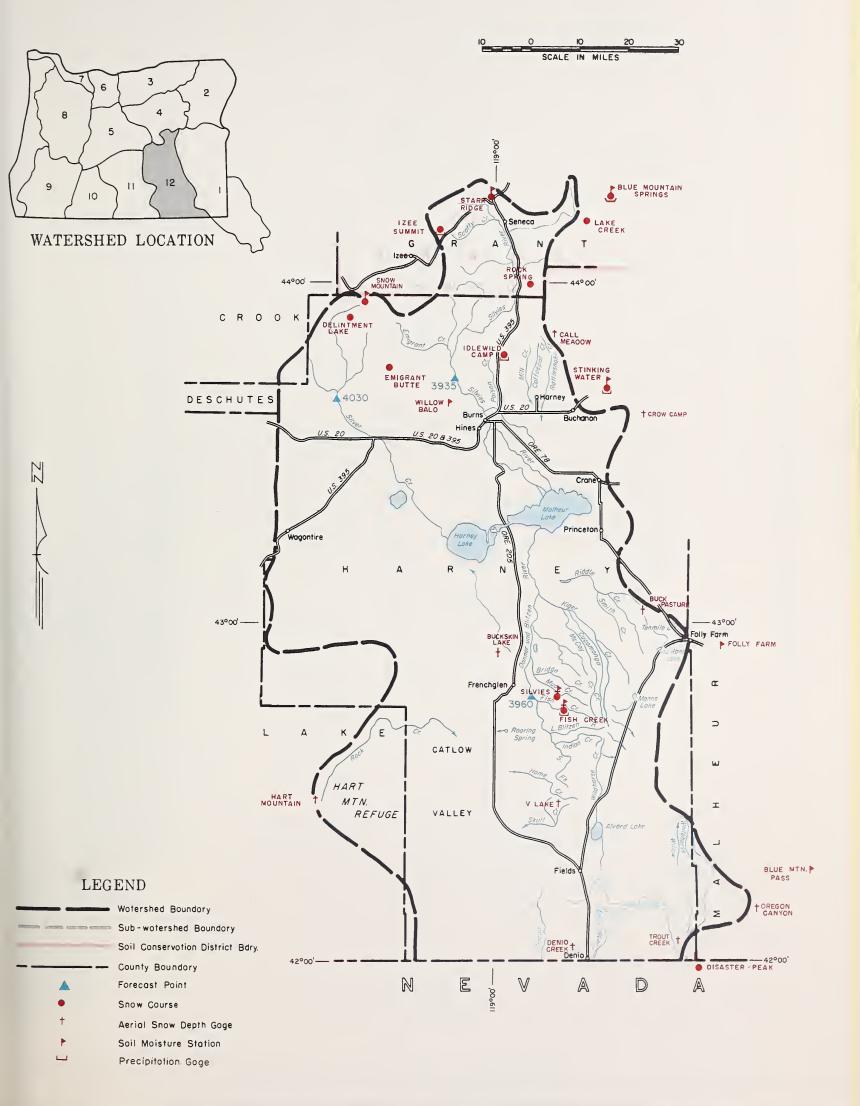
# STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of May 1, 1966

NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT. OF AVERAGE <sup>1</sup>
3960 4030 3935 4065	Donner und Blitzen near Frenchglen Silver near Riley Silvies near Burns Trout near Denio	25 30 10.8 43 45 3.6 4.0	April-June April-Sept. April-July April-June April-Sept. April-June April-Sept.	52 62 22 96 99 7.4 8.4	48 49 46 45 49 48

IL MOISTURE		PROFILE (Inches)		SOIL MOISTURE (Inches)			
STATION		DEPTH	CAPACITY	DATE	THIS	LAST	2 YEARS
NAME	ELEVATION	JE! !!!	CATACITI	JAIL	YEAR	YEAR	AGO
Blue Mountain Springs 'ish Creek 'olly Farm	5900 7900 4450	42 48 30	16.9 15.0 12.5	4-27-66 3-31-66 3-8-66	12.8 10.4 8.5	13.5  12.1	12.5 9.2 8.3
Silvies Snow Mountain Starr Ridge	6900 6300 5150	48 48 36	16.4 16.7 10.6	3-31-66 3-29-66 4-27-66	11.6 <sup><i>J</i></sup> 12.3 <sup><i>f</i></sup> 10.4	13.4 <sup>f</sup> 15.9 <sup>f</sup> 10.3	10.4 12.4 10.6
Stail Ridge Stinking Water Summit Willow-Bald	4800 5000	48	21.9	4-6-66 b	21.4 <i>f</i>	21.9f	21.1
4							

<sup>(</sup>a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# HARNEY BASIN WATERSHEDS



# Harney Basin Watersheds

SNOW		CUR	CURRENT INFORMATION			PAST RECORD	
SNOW COURSE		DATE OF	SNOW DEPTH	WATER CONTENT	WATER CONTENT (Inches)		
NAME	ELEVATION	SURVEY	(Inches)	(Inches)	LAST YEAR	1948-62 AVERAGE	
Blue Mountain Springs	5900	4/27	0	0.0	14.1	7.8 <sup>m</sup>	
Buck Pasture <sup>e</sup>	5700	С				, • •	
Buckskin Lake <sup>e</sup>	5200	С					
Call Meadows <sup>e</sup>	5340	С					
Crow Camp <sup>e</sup>	5500	с					
Delintment Lake	5600	С					
Denio Creek <sup>e</sup>	6000	С					
Disaster Peak (Nev.)	6500	С					
Emigrant Butte	5000	с					
Fish Creek	7900	С					
Hart Mountain <sup>e</sup>	6350	С			4		
Idlewild Camp	5200	4/28	0	0.0	0.0		
Izee Summit	5293	4/27	o l	0.0	0.0	1.6 <sup>m</sup>	
Lake Creek	5120	c c	Ŭ	0.0	0.0	1.0	
Oregon Canyon <sup>e</sup>	6950	c					
Rock Spring	5100		0	0.0	0.0		
		4/28	U	0.0	0.0		
Silvies	6900	С					
Snow Mountain	6300	C				- h	
Starr Ridge	5150	4/27	0	0.0	0.0	0.4 <sup>h</sup>	
Stinking Water	4800	5/1	0	0.0			
Trout Creek <sup>e</sup>	7800	С					
"V" Lake <sup>e</sup>	6600	С					

	NUBER NAME LOCATION	SLEW I NUMBER				
office est	SEC. THP. SCE	LOCATION ELEV. SEC. THP. RGE.	NUMBER NAME LOCATION ELEV. SEC. 14P. SGE.	NUMBER NAME LOCATION ELEY.	NUMBER NAME LOCATION ELEV.	NUMBER NAME LOCATION FACE
1 102 min Red at 1805 1	16311 * Red Canyon (Ida) 32 11S 4W 15HoMF Rodeo Flat (Nev) 36 43N 53E 15H3A To Creek (Nev) 6 44N 58E	6500 BURNI, POWDER, PINE, GRANDE	Gronde Ronde River	UPPER JOHN DAY WATERSHEDS (4)	Middle Fork Willamette River	RIC, TRP, R61.
Such Ever See SE SON	1673AP* Silver City (Ida) 6 58 3W 1851MA Silvies 35 328 328	6400 E 6900 Burnt River	17D1 Aneroid Lake No. 1 16 45 45E 7480 17D2P Aneroid Lake No. 2 16 45 45E 7300 18E1 Anthony Lake 18 7S 37E 7125	Upper John Doy River	22F3 Cascade Summit 7 23S 6E 4880 22F6 McCredie Springs 26 21S 4E 2120	Pocific Power and Light Campony's Snaw Stations
राष्ट्र वर्ष	logi South Mountain No.2(Ida) 10 8S 5W logos Succor Creek (Ida) 25 3S 5W	6340 18E32p* S. Fk. Willow Divide 2 16S 37E 5500	17D10a Bald Mountain 14 48 41E 6700 18D9 Beaver Reservoir 8 55 37E 5340	19D2	22F8         Meridian Dam         13 19S 1W 750           22F7         Oakridge         16 21S 3E 1310	1 Pontty (PFXL) 22 36S 12E 4300 10 Ely 101 Ranch (PFXL) 22 35S 14E 4800 3 Chiloquin (PFXL) 34 34S 7E 4187
# 1 E 6	15HS Premewan Ranch (Nev) 35 39N 53E 15HS Premewan Ranch (Nev) 9 39N 55E 10G_MA Triangle (Ida) 25 7S 3W	5700 18E13M Blue Mountain Summit 6 12S 36E 5098 17ELM Dooley Mountain 32 11S 40E 5430	18D6 County Line 28 4S 34E 4800 18D6 Lucky Strike 28 3S 32E 5050	16E16MP Blue Mountain Spring 21 15S 35E 5900 18E13M Blue Mountain Summit 6 12S 36E 5098	22F5     Railroad Overpass     21     22S     5E     2750       22F4     Salt Greek Falls     32     22S     5½E     4000       22F2     Waldo Lake     15     21S     6E     5500	4 Crystal (PP&L) 26 34S 6E 4200 5 Fort Klamath (PP&L) 22 33S 7½E 4150
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1835a Trout Creek 10 418 38E 1837a "V" Lake 31 3548 32AH	7800 18E3 Gold Center 21 98 36E 5340	17D13a Mirror Lake 34 45 44E 8200 17D6M Moss Spring 28 38 41E 5850	19E3MP Derr 14 13S 23E 5670 18E27a East Fork Canyon 15 15S 32E 5700	22F14 Willomette Pass 33 245 55 5600  Coost Fork Willomette River	6 Kirk (PF&L) 1 338 7E 4533 9 Quartz Mountain (PF&L) 33 378 16E 5504 8 Harriman Lodge (PF&L) 3 36S 6E 4200
25 25 25 25 25 25 25 25 25 25 25 25 25 2	1e312a Vaught Ranch (Ida) 10 118 1E 1e313a War Eagle (Ida) 20 58 3W	5950 7700 Powder River	1807 Schoolmarm 28 4S 34E 4775 17D11a Standley 28 2S 42E 7400	18E24a Indian Cr. Butte 5 15S 33E 6550 19E9P Izee Summit 28 16S 29E 5293	22F9 Ghampion 12 23S 1E 4500 22F10 Golden Curry Creek 1 23S 1E 3136	12 Yamse) (PF&L) 20 31S 11E 4600
10 000 21 10 10 10 10 10 10 10 10 10 10 10 10 10	Malheur River 18EL Barney Creek 16 14S 36E	18E1 Anthony Lake 18 7S 37E 7125 18E5 Bourne 33 8S 37E 7800 17ELN Dooley Mountain 32 11S 40E 5/30	1707 Taylor Green 3 68 42E 5740 1803M Tollgate 31 4N 38E 5070 17015a TV Ridge 12 28 43E 7000	1896 Lucky Strike 28 3S 32E 5050 20EIMP Marks Creek 25 12S 19E 4540	22F13     Laying Greek R. S.     31 21S 1E 1200       22F12     Lund Park     22 22S 1E 1740	LAKE COUNTY, GOOSE LAKE WATERSHEDS (11)  Goose Lake
81	1SELOMF Blue Mountain Spring 21 15S 35E 1SF6a Buck Pasture 21 29S 35E	5900 18E3 Eilertson Meadows 18 8S 38E 5400 5700 18ES Gold Center 21 9S 36E 5340		18E7 Olive Lake 14 98 34E 6000 18D7 Schoolmarm 28 48 34E 4775	22F11 Weaver Creek 35 22S 1E 2440  Mery's River	20G15a   Bear Flat Meadow   27 36S 19E 5900   20G8MF   Camas Greek   5 39S 21E 5720   20G11a   Cox Flat   16 37S 18E 5750
## 157 555 0600 ## 157 555 7250 ## 157 555 7250	18E21e	5300 18E5 Goodrich Lake 4 98 38E 6775 5340 18E59 Intake House 5 8S 38E 4930	17D2P Ameroid Lake No. 2 16 4S 45E 7000 17D14a Big Sheep 33 4S 46E 6200	19FIM   Snow Mountain   1 19S 26E 6300   19F7M   Starr Ridge   20 15S 31E 5150   18E9   Tipton   34 10S 35½E 5100	23E1 Mary's Peak 21 12S 7W 3620  ROGUE, UMPQUA WATERSHEDS (9)	20G16a Crane Mountain 13 40S 21E 6020 20H2a Crowder Flat (Cal) 30 47N 11E 5200
10 305 L69 L390	18ELOM Grane Prairie 24 16S 34E 18FSa Grow Camp Unsurveye	5375 18F23 Little Alps 10 7S 37E 6200 dd 18F28 Power Plant 33 7S 38F 3990	UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS (3)	18E25MP Williams Ranch 20 15S 32E 4500	Rague River	2013a   Dismal Syump (Cal) 31
m 18 40 000	18E20 Eldorado Fass 20 1.8 38E 18E20a Flag Prairie 32 168 36E 18E18 Lake Creek 10 168 334	4600 18E30 Little Antone 1 7S 37E 5000 4750 18D10 Summit Springs 9 6S 37E 6000	Umotilla River	UPPER DESCHUTES, CROOKED WATERSHEDS (5) Upper Deschutes River	2304     Althouse     17     418     7W     4530       2206     Annie Spring     19     318     6E     6018       22028     Beaver Dam Greek     1     388     4E     5100	20ffla State Line (Cal) 21 48N 11E 5750 20G9AP Strawberry 4 40S 16E 5760
1 250 1 250	18E22a Logan Valley 13 16S 33\$F 18F1 Rock Spring 23 18S 32E	E 5100 5100 Pine Creek	1902 Arbuckle Mountain 33 48 29E 5400 18014m Athena-Weston Summit 21 4N 35E 1700 18012M Battle Mountain Summit 29 38 31E 4340	21E11 Black Pine Spring 14 16S 9E 4600 21F8 Caldwell Ranch 30 21S 8E 4400	22G21         Big Red Mountain         31 40S 1W 6500           22G13         Billie Greek Divide         30 36S 5E 5300	Abert Lake 20015a Bear Flat Mendov 27 36S 19E 5900
1 2 2E 6300	18F4MP Stinking Water 33 218 34E		18D4M         Enigrant Springs         29         1N         35E         3925           18D6         Lucky Strike         28         3S         32E         5050	22F3	22G27         Deadwood Junction         8         38S         4E         7600           22F19         Diamond-Crater Summit         34         28S         6E         5800           22G14         Fish Lake         3         37S         4E         4865	20G18AP Colvin Creek 12 3oS 21E 6550 20G1la Cox Flat 16 37S 18E 5750
			18D5 Meacham 24 & 25 1S 35E 4300 18D3M Tollgate 32 4N 38E 5070 18D13 Walla Walla Diversion 22 6N 38E 2400	21F20P Deer Creek 25 20S 7E 4554 21F14 Fire Road 36 21S 11E 5050	22G12         Fourmile Lake         9 36S         5E 6000           23G3         Grayback Peak         9 40S         5W 6000	20614a Finley Gorrals
S. M.	A SHIIN	G T " O N " " " " " " " " " " " " " " " " "	Walla Walla River	21F6 Hogg Pass 24 138 7½E 4755 21F4 Hungry Flat 30 18S 11E 4400 21F6 Irish-Taylor 25 20S 6E 5500	22026 Howard Prairie 32 36S 4E 4500 22016 Hyatt Prairie Reservoir 15 39S 3E 4900 22022 Little Red Mountain 25 40S 2W 6500	20GlOa Sherman Valley 15 37S 21E 6600
CL 4"50"			18D16 Blue Mountain Camp 35 4N 37E 4300 18D3M Tollgate 32 4N 38E 5070 18D17 Weston Mountain 25 4N 35E 2700	21F17 Mowich 29 25S 25E 4700 21F10 New Crescent Lake 11 24S 6E 4800	23G5 Page Mountain 8 41S 7W 4045 22G5 Park Headquarters 8 31S 6F 6450	20G2AP Summer Rim 15 33S 16E 7200
I S I S I S I S I S I S I S I S I S I S		River River	18D17 Weston Mountain 25 4N 35E 2700 Willow Creek	21F19   New Dutchman Flat #2   21 185 9E 6400	22010         Seven Lakes No. 1         3 34.5         5E 6800           22011         Seven Lakes No. 2         26 338         5E 6200           2202         Silver Burn         30 30S 4E 3720	Silver Lake 21F12P Silver Greek 25 & 26 29S 13E 4900 20G13a Sycan Flat 25 31S 14E 5500
1	COLUMBIA RIVER	IBDIA BOIT BOIS WALLOWALLOWALLOWALLOWALLOWALLOWALLOWALL	19D2 Arbuckle Mountain 33 4S 29E 5400 18E1 Anthony Lake 18 7S 37E 7125	21F3     Tangent     28     18S     10E     5400       21E15     Three Creeks Butte     27     16S     9E     5200	22G20         Siskiyou Summit         17 40S         2E 4630           22G9         South Fork Canal         12 33S         3E 3500	Warner Lake
PORTL	AND PHOOD RIVER RE PIOZE OF PROCES	IBD40		22F2 Waldo Lake 15 21S 6E 5500 22F14 Willamette Pass 33 24S 5½E 5600		20G8MP
SASHIN GTON MU	CONSTRUCTION OF STRUCTURE OF ST	160150 Grove		22F15 Windigo Pass 32 258 68 5800 Crooked River	Umpqua River 22F9 Chumpion 12 23S 1E 4500 22F18 Diamond Lake 29 27S 6E 5315	19Gln   Hart Mountain
TYANHILL TO	SHERMAN GILLIAM	MO R R O W 1 100 1705 17013 17013 17013	20 0 20 40 60	19E3MP Derr 14 138 23E 5670 20E1MP Marks Greek 25 12S 19E 4540	23G7 Eden Valley Summit 10 32S 10W 2390 22F16 North Umpqua 19 26S 6E 4215	Guono Loke 1981 Bald Mountain (Nev) 17 45N 21E 6720
	2101 21017 21013 WAS S CO	1902 1807 1708	20 0 20 40 60 45° SCALE IN MILES	20E2         Ochoco Meadows         21         13S         20E         5200           19F1M         Snow Mountain         1         19S         26E         6300	22F23 Red Butte No. 2 36 278 2W 4560 22F24 Red Butte No. 2 30 278 1W 4000 22F25 Red Butte No. 3 30 278 1W 3500	1961a Hart Mountain 1 36S 25E 6350 1984a Little Bally Mt. (Nev) 8 45N 19E 6600
7	2005	1864 (8822) 1863 (38)		19E4 Temerack 8 158 25E 4800  HOOD, MILE CREEKS LOWER DESCHUTES WATERSHEDS 16)	22F26 Red Butte No. 4 36 27S 1W 3000 22F27 Red Butte No. 5 20 27S 1W 2500	HARNEY BASIN WATERSHED (12) Silvies River - Silver Croek
20:0 FM A R 22E3	0 H 225	18E7 18E8 18E5 18E6	71	Hood River	22F28     Red Butte No. 6     17     275     1W     2000       22F17     Trap Greek     1     27S     4E     3800       22G1     Whaleback     3     31S     2E     5140	18F7a Call Mendows 29 20S 33E 5340 19F2 Delintment Lako 28 19S 26E 5600 19F3 Emigrant Butto 14 21S 27E 5000
Son	22E2 Prof. SES SEFFERSON WHEE	LER 1952 IBEI3 RUGE	7	21D5     Brooks Meadows     2 2S 10E 4300       21D25M     Cooper Spur     6 2S 10E 3490       21D1     Greenpoint Reservoir     28 2N 9E 3400	22F15 Windigo Pass 20 25\$ 6E 5800	18F3P     Idlewild Cump     27     20S     31E     5200       19E9P     Izee Summit     28     16S     29E     5293
THE TOTAL PROPERTY OF THE PROP	7 (20E1) 19	E3 Oan Day Aver JISERO	LEGEND	21D20     Knebal Springs     31     1S     11E     3850       21D23     Parkdale     6     1S     10E     1770	KLAMATH WATERSHEDS (10) Klamath River	18F1     Rock Spring     23     1RS     32E     5100       19F1M     Snow Mountain     1     19S     26E     6300       19F7M     Starr Ridge     20     15S     31E     5150
Sylvan Sylvan	River 20E2	G R A N T 18614 Willow	Wetershed Boundary	21D4 Red Hill 20 1S 9E 4400 21D9 Still Creek 25 3S 8½E 3700	2266 Annie Spring 19 318 6E 6018 22G13 8illie Creek Divide 30 368 5E 5300 21G5 Bly Mountain 15 & 22 37S 11E 5090	18F4MP Stinking Water 33 21S 34F 4800 19F4m Willow-Bald 19 22S 29E 5000
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Mc 22266	ZIFIS ZIFIS CROOK	17F2 06	Snow Course	21D30 Umbrella Falls 3 35 98 5400   21D24 Upper Valley 20 1S 10E 2530 21D28 Switchback 28 1S 9B 3255	20G12a Crazyman Flat 9 345 15E 6100 20H2a Crowder Flat (Cal) 30 47N 11E 5200 22F19 Diamond-Grater Summit 34 28S 6E 5800	18G2MA Fish Creek 4 33S 33E 7900 19Glo Hart Mountain 1 36S 25E 6350
Ton Man	PIF6 2IF3	Molhout Que	O PP&L Snow Slotion	Mile Creeks - Mosier Creek 21D6 Brooks Meadows 2 2S 10E 4300	21F18 Diamond Lake Jct. (97) 1 29S 7E 4600 21G6a Dog Hollow 1 40S 14E 4900	1861MA Silviea 35 325 6900 1867a "V" Lake 31 35åS 32jE 6600 Trout and Whitehorse Creeks
(2) ZETO 2271	2272 22720 21F8 21F13 21F13	1964		21D20 Knebal Springs 31 15 11E 3850 21D21 Ulrich Ranch Junction 28 1S 11E 3350	22G12 Fourmile Lake 9 36S 5E 6000 21C4 Gerber 12 39S 13E 4850	1866a   Denio Greek   14 41S 34E 6000   18HI   Disaster Peak (Nev) 8 47N 34E 6500
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22F25 22F25 22F25	22518 21F18 21F12 Silver Lake	1863	16613	21D8 Phlox Point 6 3S 9E 5600 21D9 Still Creek 25 3S 8½E 3700	20Hla State Line (Cal) 21 48N 11E 5750	1902 SHOW COURSE ONLY 1902M SHOW COURSE AND SOIL MOISTURE
District the second	20613 Summer	601	665 666 W H E E	WILLAMETTE WATERSHEDS (8)	20G2AP Summer Rim 15 33S 16E 7200	1902MA SNOW COURSE, SOIL MOISTURE AND AERIAL MARKER  1902A SNOW COURSE AND AERIAL MARKER  1902B SOIL MOISTURE ONLY
The state of the s	21672 6 2163	3 1862	916G7	Clockamos River 21D15 Big Bottom 25 68 7E 2118	20G13a Sycan Flat 25 31S 14E 5500 21G3 Taylor Butte 22 33S 11E 5100	1902 a AERIAL MARKER ONLY 1902P SHOW COURSE AND PRECIPITATION GAGE
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# The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

Idaho Cooperative Snow Surveys
Nevada Cooperative Snow Surveys
Oregon State University
Oregon State Engineer and Corps of State Watermasters
Oregon State Highway Engineers
Soil and Water Conservation Districts of Oregon

COUNTY

Douglas County Water Resources Survey FEDERAL

Department of Agriculture Cooperative Extension Service Forest Service Soil Conservation Service

Department of Commerce

Weather Bureau

Department of the Interior
Bonneville Power Administration
Bureau of Land Management
Bureau of Reclamation
Fish and Wildlife Service
Geological Survey
National Park Service

Department of National Defense Corps of Army Engineers

PUBLIC UTILITIES

Pacific Power and Light Company Portland General Electric Company California-Pacific Utilities Company

MUNICIPALITIES

City of Baker City of La Grande City of The Dalles City of Walla Walla

IRRIGATION DISTRICTS

Arnold Irrigation District Associated Ditch Companies Burnt River Irrigation District Central Oregon Irrigation District East Fork Irrigation District Grants Pass Irrigation District Hood River Irrigation District Jordan Valley Irrigation District Juniper Flat Irrigation District Lakeview Water Users, Incorporated Medford Irrigation District Middle Fork Irrigation District North Board of Control - Owyhee Project North Unit Irrigation District Ochoco Irrigation District Rogue River Valley Irrigation District South Board of Control - Owyhee Project Squaw Creek Irrigation District Talent Irrigation District Tumalo Project Vale-Oregon Irrigation District Warmsprings Irrigation District

PRIVATE ORGANIZATIONS
Amalgamated Sugar Company

The Crag Rats, Hood River, Oregon

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